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Optivity Telephony Manager Telemanagement Applications

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Contents

About this document 23

Subject 23
Before you begin 23
Installing OTM software 23
Applicable systems 24
Intended audience 26
Conventions 26
Terminology 26
Text conventions 27
Acronyms 28
Related information 29
Online 31
CD-ROM 31

Chapter 1
Overview of telemanagement applications 33

Description of telemanagement applications 33
Telecom Billing System 34
CCCR 34
TBS Web Reporting 34
Call Tracking 34
General Cost Allocation System 35
Consolidated Reporting System 35
Purpose of this guide 35
Online and web-based Help 36

Chapter 2
Telecom Billing System 37

Introduction 37
CDR data collection options 38
Using TBS 39
Interface 39
File menu 41
Edit menu 50
View menu 55
Tools menu 56
Options menu 57
Getting started 67
Overview of a call record 68
Setting up the TBS: Example scenario 75
Setting up the TBS: Summary 75
Step 1: Ensure that the system is set up properly 76
Step 2: Install and set up buffer unit 77
Step 3: Install rate tables and location books 84
Step 4: Run TBS so it can be configured 85
Step 5: Set up and test data collection 86
Step 6: Obtain LTM from the system 90
Step 7: Set up telephone configuration 91
Step 8: Test telephone configuration 110
Update databases 114
Maintenance tasks 115
Schedule of activities 115
Data collection (daily) 116
Costing of call records (daily) 118
Report generation (monthly) 119
Database updates 120
Call Database maintenance (monthly) 123

Summary of tasks 125
System setup for hospitality billing 127
Example scenario 127
System schematic 128
Summary: Setting up the TBS 129
Step 1: Ensure that the system is set up properly 130
Step 2: Install and set up buffer unit 131
Step 3: Install rate tables and location books 132
Step 4: Run TBS so it can be configured 133
Step 5: Set up and test data collection 134
Step 6: Obtain LTM from the system 138
Step 7: Set Up Organizational Hierarchy and Employee Databases 138
Step 8: Set up Telephone Configuration Database 142
Step 9: Test telephone configuration 158
Step 10: Set up Data Transmission 161
Step 11: Start data collection and transmission 163
Setting up TBS to collect data from OTM DBA Application 165
E-mail reporting feature 167
Before you begin 167
Using the E-mail feature 167

Chapter 3
Consolidated Call Cost Reports (CCCR) 173

Introduction 173
Overview 173
Using CCCR 174
Interface 174
File menu 175
Edit menu 177
Consolidated Server list 177
Corporate Properties 179
Currency Properties 180

Getting started 181
Systems access and setup 182
Creating custom logos on reports 189

Chapter 4
TBS Web Reporting 191

Introduction 191
Overview 191
Using TBS Web Reporting 192
TBS Web Reports 192
Filters and configurations 195
Getting started 196
Additional system requirements 197
Server setup and installation 197
System access 198

Chapter 5
Call Tracking. 201

Introduction 201
Using Call Tracking 202
Call Tracking menus 202
Graphical displays 205
Sample setup for real-time monitoring 207
Sample scenario 207
Steps to connecting Call Tracking to a system 208
Getting started 212
System access 212

Chapter 6
General Cost Allocation System (GCAS). 217

Introduction 217
Using GCAS 218

File menu 218
Edit menu 218
View menu 219
Help menu 220
Getting started 220
System access 220
Operating procedures 221

Chapter 7
Consolidated Reporting System (CRS) 239

Introduction 239
Using CRS 240
Interface 240
Getting started 241
System access 241
Operating procedures 242
Appendix A: Scripts 249

Telecom Billing System (TBS) scripts 249
Call Tracking scripts 252
CDR data collection modem scripts 254
Script usage table 254
Appendix B: Sample reports 257

Cost Analysis reports 257
Entity Summary Graphs 268
Organizational Roll-Up Summary Graphs (Calls, Costs, and Duration) . 269
Account Code Roll-up Summary 269
Authorization Code Roll-up Summary 271
Entity Roll-up Summary 272
Extension Roll-up Summary 273
Directory Information 274
Role/Project Directory 274

External Party Directory 274
Employee Directory (Ordered by Organizational unit) 275
Employee Directory 275
Frequency 276
Undispersed Verification 276
Location Summary 277
Hold Time Detail 277
Frequently Called Numbers 277
External Party Summary 277
Duration Summary 278
Digits Detail 279
Calling Area Summary 280
Area Code 280
Location Summary 280
Surcharge 281
Exception/Chronological Surcharge Report 281
Entity Surcharge 282
Utility Tools 284
Trunk Diagnostic report 284
Telephone Configuration report 285
System Configuration 286
Extension Diagnostic report 286
Authorization Code Diagnostic report 287
Account Code Diagnostic report 288
Traffic Reports 288
Trunk Group Graphs (Available for Calls, Costs, and Duration) 288
Trunk Usage 289
Web Reports 291
Cost Reports 291
Level Reports 293
Frequency/Digits Reports 294

Trunk Reports 296
Diagnostic Reports 297
Glossary 299
Index 307

Figures

Figure 1 TBS . . . 39
Figure 2 System Tasks pane . . . 40
Figure 3 System Monitor pane . . . 40
Figure 4 System Alarm pane . . . 41
Figure 5 Reporting dialog box . . . 43
Figure 6 Telephone Configuration Database editor . . . 54
Figure 7 Setup transmission record . . . 59
Figure 8 TBS . . . 64
Figure 9 Settings dialog box—Collection tab . . . 65
Figure 10 Settings dialog box—Costing tab . . . 66
Figure 11 Settings dialog box—Transmission tab . . . 67
Figure 12 System block diagram . . . 69
Figure 13 Sample system setup . . . 71
Figure 14 Sample call record allocation . . . 72
Figure 15 Meridian 1 to MDR-2000 ISD . . . 79
Figure 16 MDR-2000 ISD to modems to PC . . . 80
Figure 17 MDR-2000 ISD status . . . 83
Figure 18 OTM Navigator . . . 85
Figure 19 TBS main window . . . 86
Figure 20 Call Database . . . 90
Figure 21 Telephone Configuration editor . . . 92
Figure 22 Call Type Definition . . . 94
Figure 23 Carrier Pricing Template . . . 95
Figure 24 Carrier Pricing Template: International Calls . . . 97
Figure 25 Carrier Pricing Template: Long Distance (National) Calls . . . 98
Figure 26 Telephone Configuration editor . . . 102
Figure 27 Telephone Configuration - Node editor . . . 104
Figure 28 Telephone Configuration - Service Definition . . . 107
Figure 29 Reset Status . . . 111

Figure 30 System block diagram 128
Figure 31 OTM Navigator 133
Figure 32 TBS main window 134
Figure 33 Call Database 137
Figure 34 Organizational Hierarchy Editor 140
Figure 35 Employee Database Employee Editor 142
Figure 36 Telephone Configuration editor 144
Figure 37 Carrier Pricing Template: International Calls 147
Figure 38 Carrier Pricing Template: Long Distance (National) Calls 148
Figure 39 Transmission tab 163
Figure 40 Setting up TBS to collect data from OTM DBA 166
Figure 41 Reporting 168
Figure 42 Mail Server Configuration 169
Figure 43 E-Mail Recipients 171
Figure 44 CCCR 175
Figure 45 CCCR 183
Figure 46 Consolidated Server list 185
Figure 47 TBS Web Reports page 193
Figure 48 Filters page for Extension Summary Report 196
Figure 49 Schematic for sample scenario 208
Figure 50 OTM Navigator 210
Figure 51 Call Tracking main window 214
Figure 52 GCAS main window 221
Figure 53 Employee Database Employee Editor 224
Figure 54 Record Editor dialog box 232
Figure 55 Reporting dialog box 235
Figure 56 CRS main window 242
Figure 57 Consolidated report structure 243
Figure 58 Extension Detail report 257
Figure 59 Extension Detail report with Account Codes 258
Figure 60 Exception/Chronological report 259
Figure 61 Entity Detail report 260

Figure 62 DNIS Summary report 261
Figure 63 DNIS Detail report 262
Figure 64 Auxiliary ID Detail report 263
Figure 65 Authorization Code Detail report 264
Figure 66 Account Code Summary report 265
Figure 67 Account Code Detail report 266
Figure 68 Account Code Detail with Employees report 267
Figure 69 Entity by Duration 268
Figure 70 Corporate Account Code Summary 270
Figure 71 Authorization Code Rollup Summary report 271
Figure 72 Entity Rollup Summary 272
Figure 73 Extension Rollup Summary 273
Figure 74 Role/Project Directory 274
Figure 75 External Party Directory 275
Figure 76 Undisbursed Verification report 276
Figure 77 Duration Summary Graph by call type 278
Figure 78 Call Duration 279
Figure 79 Location by cost summaryt 281
Figure 80 Entity Surcharge Detail report 283
Figure 81 Trunk Diagnostic report 284
Figure 82 Telephone Configuration report 285
Figure 83 System Configuration report 286
Figure 84 Extension Diagnostic report 287
Figure 85 Authorization Code Diagnostic report 287
Figure 86 Account Code Diagnostic report 288
Figure 87 Trunk Group utilization by duration 289
Figure 88 Trunk Utilization 290
Figure 89 Authorization Code Summary 292
Figure 90 Authorization Code Roll-Up 294
Figure 91 Hold Time by Extension 296
Figure 92 Trunk Utilization 297
Figure 93 Trunk Diagnostic 298

Tables

Table 1 Meridian 1 systems to CS 1000M systems 25
Table 2 OTM Scheduler 116
Table 3 Trunks and extensions filters 162
Table 4 Examples of mask properties 228
Table 5 Mask characters 229
Table 6 Summary of record fields 233
Table 7 Script usage table 255

About this document

Subject

Optivity Telephony Manager (OTM) telemanagement applications provide OTM users with telecommunications network management services, including telecommunications billing and management, web-based reporting, consolidated reporting, and call monitoring.

Before you begin

This user guide is intended for telecommunications network managers using PC-based software. Prior knowledge of the OTM suite is not required; however, since these applications are installed as part of OTM, users should become familiar with OTM before proceeding.

This guide assumes that you have user-level knowledge of Windows® 2000 Server/Professional and Windows XP Professional operating systems.

Installing OTM software

To install and configure OTM software on a system, use the *Optivity Telephony Manager: Installation and Configuration* (553-3001-230).

Note on legacy products and releases

This NTP contains information about systems, components, and features that are compatible with Nortel Communication Server 1000 Release 4.0 software. For more information on legacy products and releases, click the **Technical Documentation** link under **Support** on the Nortel home page:

http://www.nortel.com/

Applicable systems

This document applies to the following systems:

- Meridian 1 PBX 11C Chassis
- Meridian 1 PBX 11C Cabinet
- Meridian 1 PBX 51C
- Meridian 1 PBX 61C
- Meridian 1 PBX 61C CP PII
- Meridian 1 PBX 81
- Meridian 1 PBX 81C
- Meridian 1 PBX 81C CP PII
- Communication Server 1000S (CS 1000S)
- Communication Server 1000M Chassis (CS 1000M Chassis)
- Communication Server 1000M Cabinet (CS 1000M Cabinet)
- Communication Server 1000M Half Group (CS 1000M HG)
- Communication Server 1000M Single Group (CS 1000M SG)
- Communication Server 1000M Multi Group (CS 1000M MG)
- Communication Server 1000E (CS 1000E)

Note: When upgrading software, memory upgrades may be required on the Signaling Server, the Call Server, or both.

System migration

When particular Meridian 1 systems are upgraded to run CS 1000 Release 4.0 software and configured to include a Signaling server, they become CS 1000M systems. Table 1 lists each Meridian 1 system that supports an upgrade path to a CS 1000M system.

Table 1 Meridian 1 systems to CS 1000M systems

This Meridian 1 system...	Maps to this CS 1000M system
Meridian 1 PBX 11C Chassis	CS 1000M Chassis
Meridian 1 PBX 11C Cabinet	CS 1000M Cabinet
Meridian 1 PBX 51C	CS 1000M Half Group
Meridian 1 PBX 61C	CS 1000M Single Group
Meridian 1 PBX 61C CP PII	CS 1000M Single Group
Meridian 1 PBX 81	CS 1000M Multi Group
Meridian 1 PBX 81C	CS 1000M Multi Group
Meridian 1 PBX 81C CP PII	CS 1000M Multi Group

For more information, see one or more of the following NTPs:

- *Communication Server 1000M and Meridian 1: Small System Upgrade Procedures* (553-3011-258)
- *Communication Server 1000M and Meridian 1: Large System Upgrade Procedures* (553-3021-258)
- *Communication Server 1000S: Upgrade Procedures* (553-3031-258)

Intended audience

This guide is intended for CS 1000 and Meridian 1 system administrators using a Microsoft Windows-based PC for management activities. It assumes that you have the following background:

- Working knowledge of Windows® 2000 Server/Professional and Windows XP Professional operating systems
- Familiarity with CS 1000 and Meridian 1 system management activities
- Knowledge of general telecommunications concepts
- Experience with windowing systems or graphical user interfaces (GUIs)
- Knowledge of Internet Protocol (IP)

Conventions

Terminology

In this document, the following systems are referred to generically as "system":

- Meridian 1
- Communication Server 1000S (CS 1000S)*****
- Communication Server 1000M (CS 1000M)*****
- Communication Server 1000E (CS 1000E)*****

The following systems are referred to generically as "Small System":

- Meridian 1 PBX 11C Chassis
- Meridian 1 PBX 11C Cabinet
- Communication Server 1000M Chassis (CS 1000M Chassis)*****
- Communication Server 1000M Chassis (CS 1000M Cabinet)*****

The following systems are referred to generically as “Large System”:

- Meridian 1 PBX 51C
- Meridian 1 PBX 61C
- Meridian 1 PBX 61C CP PII
- Meridian 1 PBX 81
- Meridian 1 PBX 81C
- Meridian 1 PBX 81C CP PII
- Communication Server 1000M Half Group (CS 1000M HG)*****
- Communication Server 1000M Single Group (CS 1000M SG)*****
- Communication Server 1000M Multi Group (CS 1000M MG)*****

***** Systems that are referred to as “CS 1000”

Text conventions

The text conventions are:

bold Courier text	Indicates command names and options and text that you need to enter. Example: Use the **dinfo** command. Example: Enter **show ip {alerts|routes}**.
brackets ([ ])	Indicate optional elements in syntax descriptions. Do not type the brackets when entering the command. Example: If the command syntax is `show ip interfaces [-alerts]`, you can enter either `show ip interfaces` or `show ip interfaces -alerts`.

italic text	Indicates new terms, book titles, folder and file names, and variables in command syntax descriptions. Where a variable is two or more words, the words are connected by an underscore. Example: If the command syntax is `show at <valid_route>, valid_route` is one variable and you substitute one value for it.
`plain Courier text`	Indicates command syntax and system output (for example, prompts and system messages). Example: `Set Trap Monitor Filters`
separator (>)	Shows menu paths. Example: Protocols > IP identifies the IP option on the Protocols menu.
vertical line (|)	Separates choices for command keywords and arguments. Enter only one of the choices. Do not type the vertical line when entering the command. Example: If the command syntax is `show ip {alerts|routes}`, you enter either `show ip alerts` or `show ip routes`, but not both.

Acronyms

This guide uses the following acronyms:

CDR	call detail recording
CLI	command line interface
DBA	data buffering and access
DNIS	dialed number info service
IP	Internet Protocol
ISA	internet security and acceleration
ISDN	Integrated Services Digital Network

SDI	Serial Data Interface
SMTP	simple mail transfer protocol
TBS	Telecom Billing System

Related information

For more information about using Optivity Telephony Manager for systems and associated applications, refer to the following publications:

- *Meridian 1 Integrated Telephony Gateway Trunk 1.0/Basic Per-Trunk Signaling: Description, Installation, and Operation* (553-3001-116)

  Describes configuration and maintenance of the 8-port ITG trunk card.

- *Meridian 1 Integrated Telephony Gateway Line Card 1.0/IP Telecommuter: Description, Installation, and Operation* (553-3001-119)

  Describes configuration and maintenance of the IP line card for IP Telecommuter.

- *Optivity Telephony Manager: Installation and Configuration* (553-3001-230)

  Explains how to install and configure OTM software on a system.

- *Optivity Telephony Manager: System Administration* (553-3001-330)

  Explains how to manage OTM sites, systems, and software.

- *Features and Services* (553-3001-306)

  Describes features associated with systems. For each feature, information is provided on feature implementation, feature operation, and interaction between features.

- *Software Input/Output: Administration* (553-3001-311)

Describes the prompts and responses for a system's command line interface (CLI). This guide includes information on overlay programs that are classified as administration overlays.

- *IP Trunk: Description, Installation, and Operation* (553-3001-363)

  Describes configuration and maintenance of the 24-port ITG trunk card. This card appears as a 24-port trunk card with ISDN Signaling Link (ISL) and D-channel signaling.

- *IP Line: Description, Installation, and Operation* (553-3001-365)

  Describes configuration and maintenance of gateway cards.

- *Telephones and Consoles: Description, Installation, and Operation* (553-3001-367)

  Describes telephones and related features. The telephones provide access to an OTM-generated Corporate Directory.

- *Software Input/Output: System Messages* (553-3001-411)

  Describes the meaning of system messages.

- *Software Input/Output: Maintenance* (553-3001-511)

  Describes the prompts and responses for a system's CLI. This guide includes information on overlay programs that are classified as maintenance overlays.

- *Communication Server 1000M and Meridian 1: Large System Installation and Configuration* (553-3021-210)

  Provides information on the Survivable IP Expansion (SIPE) feature for a Meridian 1 Large System.

- *Communication Server 1000S: Installation and Configuration* (553-3031-210)

  Provides information on the SIPE feature for CS 1000S systems.

  Describes the meaning of the messages generated by the CS 1000S system.

- *Communication Server 1000E: Installation and Configuration* (553-3041-210)

Describes the installation and configuration of the CS 1000E server.

Online

To access Nortel documentation online, click the **Technical Documentation** link under **Support** on the Nortel home page:

http://www.nortel.com/

CD-ROM

To obtain Nortel documentation on CD-ROM, contact your Nortel customer representative.

Chapter 1
Overview of telemanagement applications

Optivity Telephony Manager's telemanagement applications offer you a wide range of telecommunications and network management services, including billing and management, web-based reporting, consolidated reporting, and call monitoring. Each application contains unique functions that allow you to collect, cost, track, and report on your telecommunications data. Together, they provide you with a complete call management and billing solution for your telecommunications network.

The following is a list of the telemanagement applications available from the Optivity Telephony Manager (OTM):

- Telecom Billing System (TBS)
- Consolidated Call Cost Reports (CCCR)
- TBS Web Reporting
- Call Tracking
- General Cost Allocation System (GCAS)
- Consolidated Reporting System (CRS)

Each application is installed separately onto OTM and runs independently of the other applications while still sharing common data, such as employee and configuration information. As well, some applications use data from the other applications during their operation. For example, TBS Web Reporting reports on data from CRS and TBS; and the CRS generates reports for TBS and GCAS applications.

Based on your OTM license, you may have some or all of these applications included with your OTM system. Contact your vendor for information on ordering additional telemanagement applications for OTM.

Description of telemanagement applications

The following is a brief description of the telemanagement applications available for OTM. Refer to the remaining chapters in this user guide for more information on these applications.

Telecom Billing System

TBS is OTM's advanced cost allocation and billing application. It collects call records from your systems. It uses multiple costing models over multi-level organizational hierarchies to allocate costs to the appropriate users, and to web generate detail and summary reports outlining these costs. These reports detail the actual usage of your telephone system, thus allowing you to assess the effectiveness of your telephone services. As well, its network utilization and system administration reports help you to manage your telecommunications network more effectively.

CCCR

CCCR is OTM's system integration and reporting application. CCCR combines data from the Corporate Directories in each of your OTM systems and generates billing reports based on this consolidated data. Specifically used for the OTM TBS, the CCCR application reports on your calling activity across multiple systems on a single OTM server.

TBS Web Reporting

TBS Web Reporting is OTM's web-based reporting application for your telecommunications network. With TBS Web Reporting, you can generate reports containing data from the TBS through your intranet or Internet server. These reports provide you with valuable information about your organization's calling activities. Its intuitive web-based interface allows you to view this information from any PC with intranet or Internet access to your server. Since these reports are based on data from the TBS, you must have previously installed and configured the TBS application as part of OTM.

Call Tracking

Call Tracking is OTM's call monitor and alarm application. Its graphs indicate trends and provide displays of unusual calls, enabling you to adjust your equipment and services to maximize your resources. Call Tracking monitors and displays information output from the system. It accumulates this data and displays the information in different formats in its graphical

displays. The Call Tracking interface consists of several graphical displays, which list your monitored call data in different formats.

Call Tracking also provides alarm generating functions, which can be set up to warn you of unusual calling patterns. This is useful in the quick detection of unauthorized telephone calls that occur with toll fraud. You can define multiple alarm templates to detect different calling patterns, including calls exceeding a certain duration, calls made at unusual times, and toll calls. Call Tracking can also be configured to output different types of alarms, including visible and audible alarms on your PC, remote paging, and network reported alarms.

General Cost Allocation System

The GCAS is OTM's generic billing application. It assigns usage charges to appropriate individuals or departments within an organization. It can import bill information, identify and log departmental or user-specific spending characteristics, and generate meaningful reports summarizing these costs. With the GCAS, you can enter billing information, either through an imported file or manually from the printed vendor statement. The data can then be used to allocate charges, such as those obtained from cellular calls or pagers, to relevant individuals or departments within your organization. The GCAS generates detail and summary reports, including the billed products or services, associated costs, and departments or persons to be billed.

Consolidated Reporting System

The CRS is OTM's telemanagement reporting application. It generates reports for both TBS and GCAS from a single interface. By defining filtering and sorting criteria, you can generate custom reports that detail organizational and employee spending characteristics for these applications. Each report is broken down into subreports, which detail usage costs for TBS and GCAS.

Purpose of this guide

This user guide is designed to provide you with basic information on setting up and using the OTM telemanagement applications. Where applicable, it

includes any additional system requirements or installation procedures for specific applications. Before using these applications, you must install and configure them as part of the OTM system. Refer to *Optivity Telephony Manager: Installation and Configuration* (553-3001-230) for complete details on installing these applications and assigning them to a site and a system.

Online and web-based Help

This user guide only briefly discusses the functions and commands of the OTM telemanagement applications. It provides you with a basic understanding of each of these applications and helps you to start using the applications. For detailed information on each function and command for these applications, refer to the online Help function included with them.

You can use the Help functions to obtain help for topics either directly or through their indexes and word-search functions. While running these applications, you can obtain context-sensitive Help on any topic you require by simply clicking Help from a specific window or dialog box. This accesses the Windows® Help function and displays context-sensitive Help information on the current topic.

To obtain help for a topic in TBS Web Reporting, click **Help** from the currently selected web page. This accesses the Help function and displays context-sensitive Help information on the current topic.

Note: If you click Help from a web page other than that belonging to TBS Web Reporting (for example, the OTM Administrator Login page), then the other web application's Help appears.

Chapter 2
Telecom Billing System

This chapter provides basic information on setting up and running the Telecom Billing System (TBS). It also includes example procedures and reference information to assist you in setting up the TBS.

Introduction

As OTM's advanced costing and billing application, the TBS helps monitor and control telecommunications costs for your telephone system. It collects call records from your system, allocates costs to the appropriate users, and generates detail and summary reports outlining these costs. The reports provide details on the actual usage of your telephone system, and allow you to assess the effectiveness of your telephone services.

The TBS collects data from your system through a buffer device, a direct connection, or through a network connection. It uses defined communications and collection parameters to communicate with the system and collect the necessary telephone usage data.

The TBS supports the CS 1000 and Meridian 1 lines of telephony equipment. Once you collect the call records either directly from the system or from the Call Detail Recording (CDR) buffer unit, the records must be costed, collated, sorted, and printed on a report. This call detail information helps you achieve the following goals:

- The system provides details on the actual telephone usage. Management can isolate individual users and departments who are not properly utilizing the telephone system through misuse or neglect.
- It provides usage details for cost allocation within the organization or for client billing purposes.
- Management can use the information to determine which telephone company services are not being utilized. This analysis allows you to adjust your telephone services to suit your needs, resulting in savings to your organization.

CDR data collection options

The TBS can collect CDR data from the system in several ways:

- It can collect CDR data directly from the system to its databases.
- It can collect CDR data through the OTM Data Buffering and Access (DBA) application (network or serial connection).
- It can collect CDR data through a buffer unit.

The DBA application and the optional buffer units can be used to continuously collect CDR data from the system and store the data for later collection and processing by the TBS. CDR data is saved to system-specific files so that multiple instances of DBAs or buffer units can be supported concurrently by the TBS.

For a complete list of script files used for communications and data collection, refer to "Appendix A: Scripts" on page 249. For more information about the DBA application, refer to the "Data Buffering and Access" section in the "Common Services" chapter of *Optivity Telephony Manager: System Administration* (553-3001-330).

Where required, buffer units can connect to each system through its RS-232 port and connect to the PC using a supported modem. Nortel recommends that the buffer unit contain battery backup power in the event of a power failure. Refer to the buffer unit's reference documentation for more information.

Note: Nortel recommends that you use either the DBA application or a buffer unit for CDR data collection. If you use one of these devices, the CDR data is collected and securely stored for later retrieval by the TBS. Although the DBA or buffer units are not required to properly use the TBS, these options are recommended to securely store the CDR data. If you choose to collect the CDR data directly to the PC without the use of the DBA or buffer unit, then you may lose data if the PC is accidentally rebooted or shut down.

The TBS allows you to collect data from multiple buffer units into one system. This way, you can integrate data from multiple sites into a single system.

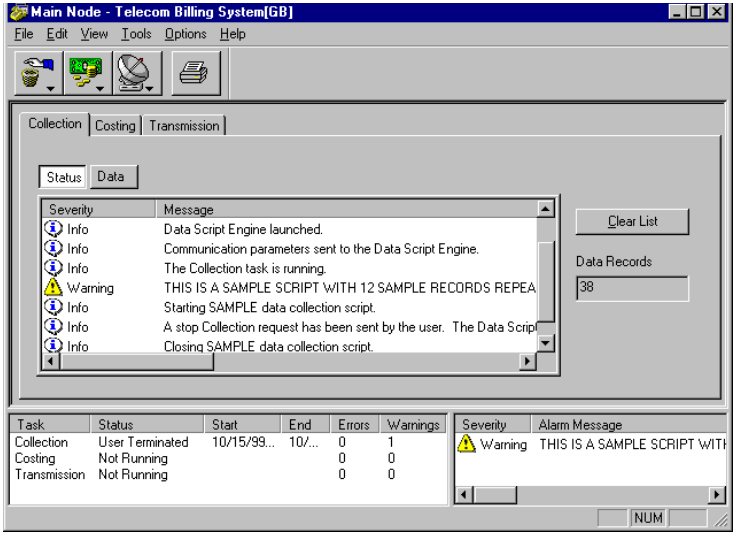
Using TBS

This section contains an overview of the TBS functions and databases. It briefly describes their function and purpose. For complete details on each of these functions and their operation, refer to the online Help included with the software.

Interface

The **TBS's** main window is the main interface for editing the databases, collecting data, and generating reports. See Figure 1.

Figure 1 TBS


Main Node - Telecom Billing System[GB]
File Edit View Tools Options Help
Collection Costing Transmission
Status Data
Severity Message
Info Data Script Engine launched.
Info Communication parameters sent to the Data Script Engine.
Info The Collection task is running.
Warning THIS IS A SAMPLE SCRIPT WITH 12 SAMPLE RECORDS REPEA
Info Starting SAMPLE data collection script.
Info A stop Collection request has been sent by the user. The Data Scrip
Info Closing SAMPLE data collection script.
Clear List
Data Records
38
Task Status Start End Errors Warnings
Collection User Terminated 10/15/99... 10/... 0 1
Costing Not Running 0 0
Transmission Not Running 0 0
Severity Alarm Message
Warning THIS IS A SAMPLE SCRIPT WITH
NUM

The following sections provide a brief outline of the TBS commands, databases, and panes.

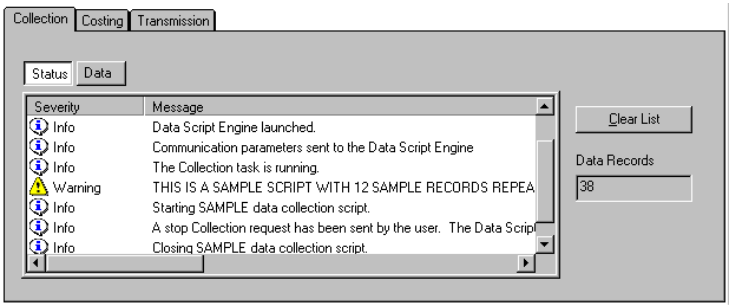
Panes

The TBS displays its activities in the following panes:

System Tasks pane

The **System Tasks** pane, shown in Figure 2, displays information about the data collection, costing, and data transmission functions. Each tab in this pane displays the data being processed, as well as the status of each process. Use this pane to view the status of your data and of the system's functions.

Figure 2 System Tasks pane



System Monitor pane

The **System Monitor** pane, shown in Figure 3, displays another view of Collection, Costing, and Transmission activities. You can easily view the status of a particular process and determine at a glance if the system is running properly.

Figure 3 System Monitor pane

Task	Status	Start	End	Errors	Warnings
Collection	User Terminated	10/15/99...	10/...	0	1
Costing	Not Running			0	0
Transmission	Not Running			0	0

System Alarm pane

The **System Alarm** pane, shown in Figure 4, displays any alarm messages to indicate any abnormal activity during the TBS session. It displays the alarm messages for alarms that were defined in the System Configuration function. When the system encounters an activity that surpasses a defined alarm threshold, it displays the corresponding alarm in this pane. As well, this pane displays all status messages for any running tasks with a severity level of "Warning" or higher.

Figure 4 System Alarm pane

File menu

The File menu accesses functions used to archive, purge, and restore the Call Database; import and export data; generate reports; and exit from the TBS.

To access these functions, click **File** from the main window, and then select from the following menu options:

- **Call Database**
  - **Archive**
  - **Restore**
  - **Purge**
- **Import**
- **Export**
- **Reports**
- **Exit**

Call Database

The **Call Database** menu option accesses another cascading menu containing the Archive, Restore, and Purge menu options. These menu options access the Archive, Restore, and Purge functions, which help you to manage your Call Database records.

Archive

The **Archive** function is used to copy—or archive—a range of call records from the Call Database to an external device, such as a network drive or a disk.

Restore

The **Restore** function is used to copy—or restore—the archived call records from an external device, such as a network drive, back to the Call Database.

Purge

The **Purge** function is used to delete—or purge—a range of call records from the Call Database. This frees more disk space on your PC for new call records and improves overall system performance.

Import

The **Import** function is used to import data records from an external source to this system and convert them to a format compatible with the TBS databases. This function is useful for quickly updating the TBS databases with data from another application.

Export

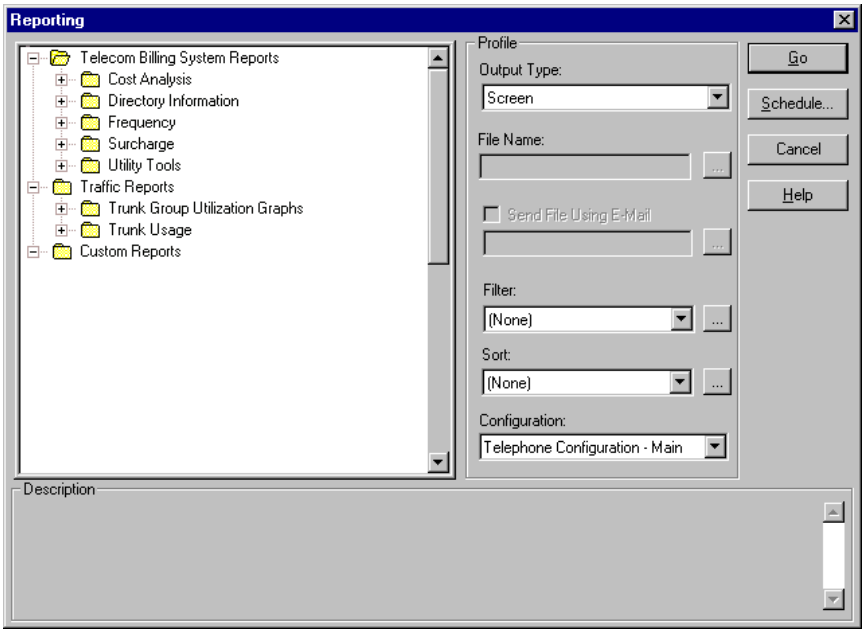
The **Export** function is used to export data from the TBS databases to an external source.

Reports

The TBS reports provide you with thorough and detailed information about your telephone system. These reports detail and summarize your telephone

system's usage, assign costs to the appropriate cost centers, and display information on your system's organizational databases. As well, they provide statistics on your system to help assess the effectiveness of your telephone services.

Figure 5 Reporting dialog box



Reporting options

The following options are used to select the output device for the report, as well as its filters and sorting definitions. These options appear in the Profile section (right side) of the Reporting dialog box, shown in Figure 5.

Output Type

The **Output Type** drop-down list box contains a list of output formats for the selected report. You can select from the following options:

Screen: This option displays the report on the screen.

Printer: This option prints the report to the Windows-configured printer.

Rich Text Format: This option exports the report to a file in rich text format (RTF). Its filename is the name you entered in the **File Name** box as *extension*.RTF.

HTML Format: This option exports the report to a file in hypertext markup language format (HTML). Its filename is the name you entered in the **File Name** box as *extension*.HTM.

Snapshot Format: This option exports the report to a file in Microsoft Snapshot format. Its filename is the name you entered in the **File Name** box as *extension*.SNP. To open the file in Snapshot format, you must have the Snapshot Viewer installed on your PC.

File Name

When outputting a report to a format other than a printer or screen, the Report Generator requires that you specify its filename and destination. This way, it can save the report to a file in that selected format. In the File Name box, enter the name of the file to which the report will be exported. Also select the destination drive and directory for this file. This filename has an extension that corresponds to the format of the file. This field is activated only if you are exporting the report to a file in one of the supported formats (RTF, HTML, or Snapshot).

Note that you can enter specific variable tags in your filenames to create unique filenames during report generation. This provides you with added flexibility when you are generating reports at scheduled intervals and you do not want to rename the files for each interval.

Send File Using E-Mail

When generating a report to a file, you can also send copies of that file to definable e-mail addresses. The **Send File Using E-Mail** option allows you to e-mail a copy of the report to selected e-mail addresses. When you generate the report, this option inserts the report file as an attachment to an e-mail message. This option e-mails the outputted file that you entered in the File Name box. Since this function inserts the report file as an attachment to an

e-mail message, it is available only if you are outputting a file to RTF or Snapshot format.

Filter Definitions

The **Filter Definitions** function is used to select the reporting criteria for your reports. This allows you to generate reports based on very specific requirements. For example, you may want to view a report for only the current day. You can simply use the **Filter Definitions** function to select the most recent day for this report. You can then select this filter name from the **Filter** drop-down list box in the main **Report Generation** dialog box when you print the report.

Sort Definitions

The **Sort Definition** function is used to sort the data in the reports in different formats. For example, you may want to display a report by date and time. You can simply use the **Sort Definition** function to sort the report by the selected date and time. You can then select this sort definition name from the **Sort** drop-down list box in the Reporting dialog box when you print the report.

Reporting commands

The following is a list of the Report Generator commands:

Go: This command generates the selected report.

Schedule: This command schedules the report to be run at a later date and time. This accesses the Scheduler application from which you can enter the scheduling criteria for the report, including the initial date and time of the report generation, as well as any subsequent intervals for generating the report.

Cancel: This command exits from this function.

Help: This command allows you to obtain help on the Report Generator function.

Creating custom logos on reports

Each TBS report contains a common header graphic, which is located at the top left corner of the report. This graphic helps you to easily identify the reports as part of the TBS.

The TBS allows you to edit this graphic, or even replace it with another graphic, by simply editing a bitmap (BMP) file. You can replace this graphic with another more descriptive design, such as your company logo, to suit your own needs. For example, you can include your company logo on your TBS reports to provide you with professional-looking reports that are customized for your organization.

Caution: Be careful when editing this graphic file. If the file is too large, it may cause errors with the generated reports. To ensure that the original graphic file is secure, you should make a backup copy of it. To do so, copy the file Logo.bmp from the site/system directory to another directory, or simply rename it (for example, Backup_Logo.bmp).

Perform the following steps to create a custom graphic or logo for your reports.

1. Use a graphics program such as MS Paint to create a bitmap with the following dimensions: 3.73" (W) by 0.86" (H).
2. Insert or create the new graphic (for example, your company logo) in the bitmap file.
3. Save this file as Logo.bmp to the drive and directory for your site and system (for example, C:\Nortel\Common Data\Sample Site\Sample System\Logo.bmp).

To help you to use the correct dimensions for your logo, you can make a copy of the original graphic file Logo.bmp and use it as a template for your own graphic. Simply open the file Logo.bmp and insert the new graphic in the file.

The TBS reporting function automatically uses this logo on your reports.

List of reports

The following is a list of the reports that are available for the TBS.

Cost Analysis Reports

The Cost Analysis Reports display costing information for calls made by your employees, either by their extensions or authorization codes. The tabulated costs are then rolled up to their respective organizational level summaries. Costs can also be identified by account codes and then charged back to your clients.

The following is a list of the available Cost Analysis Reports:

- Extension Detail Report
- Extension Detail Report with Account Codes
- Exception Chronological Report
- Entity Detail Report
- Dialed Number Info Service (DNIS) Summary Report
- DNIS Detail Report
- Auxiliary ID Detail Report
- Authorization Code Detail Report
- Account Code Summary Report
- Account Code Detail Report with Employees
- Account Code Detail Report
- Entity Summary Graphs
- Organization Roll-up Summary Graphs
- Account Code Roll-up Summary Reports
- Authorization Code Roll-up Summary Reports
- Entity Roll-up Summary Reports
- Extension Roll-up Summary Reports

Directory Information Reports

The Directory Information Reports provide you with details about your system's corporate databases. Such reports as the role/project, external party, and employee directory reports are useful in maintaining an up-to-date listing of your projects, customers, and employees.

The following is a list of the available Directory Information Reports:

- Role/Project Directory Report
- External Party Directory Report
- Employee Directory Report (ordered by Organizational Unit)
- Employee Directory Report

Frequency Reports

The Frequency Reports provide details on actual telephone usage. Management can isolate individual users and departments that are not properly using the telephone system through misuse or neglect. As well, system administrators can use this information to determine which services are not being utilized. This analysis allows you to adjust your telephone services to suit your needs.

The following is a list of the available Frequency Reports:

- Undisbursed Verification Report
- Unanswered Calls Summary Report
- Unanswered Call Detail Report
- Ring Time Report
- Ring Time Analysis Report
- Location Summary Report
- Hold Time Summary Graph
- Hold Time Detail Report
- Frequently Called Numbers Report
- External Party Summary Report

- Duration Summary Graph by Call Type
- Duration Summary Graph
- Digits Detail Report
- Call Area Summary Report
- Area Code Summary Report
- Area Code Location Summary Report
- Area Code Summary Graphs
- Location Summary Graphs

Surcharge Reports

The Surcharge Reports display costing information for calls made through your system. They itemize the total usage charges by cost, surcharge (profit), and total cost (billed amount). The tabulated costs are then rolled up to their respective organizational level summaries. These costs are identified by the associated authorization codes and extensions on the entity reports. The costs can also be identified by account codes and then charged back to your clients.

The following is a list of the available Surcharge Reports:

- Exception/Chronological Surcharge Report
- Entity Surcharge Summary Report
- Entity Surcharge Detail Report
- Account Code Surcharge Summary Report
- Account Code Surcharge Detail Report
- Account Code Surcharge Roll-up Summary Reports
- Entity Surcharge Roll-up Summary Reports

Utility Tools Reports

The Utility Tools Reports provide assistance in managing the telephone configuration databases. These reports highlight features of your telephone configuration that must be updated regularly to keep your network management and fiscal reports accurate.

The following is a list of the available Utility Tools Reports:

- Trunk Diagnostic Report
- Telephone Configuration Report
- System Configuration Report
- Extension Diagnostic Report
- Authorization Code Diagnostic Report
- Account Code Diagnostic Report

Traffic Reports

The Traffic Reports help to determine cost effective networking solutions by critically examining the telephone system's trunks and services.

The following is a list of the available Traffic Reports:

- Trunk Group Utilization Graphs
- Trunk Usage Reports
  - Trunk Utilization Report
  - Trunk Graph
  - Trunk Detail Report
  - Tandem Tie Summary Report

Custom Reports

The Custom Reports folder contains any custom reports that have been created using the Custom Reports Utility. This utility is used to create and build reports using the tables and data from the TBS databases.

Edit menu

The **Edit** menu accesses the TBS's main databases. These databases contain all of the information you need to run the TBS effectively for your organization.

To access these databases, click **Edit** from the main window, and then select from the following:

- Organizational Hierarchy
- Employees
- External Parties
- Roles/Projects
- Asset Assignments
- Telephone Configuration
- Location Books
- Rate Tables
- Taxes
- Call Database

Organizational Hierarchy

The Organizational Hierarchy Database contains the different structural levels within your organization (for example, departments, divisions, and so on). You can create up to 20 different levels in this hierarchy. The Organizational Hierarchy and the Level editors are used to create, name, and arrange these different organizational levels. The employees in your organization are assigned to these levels. The cost summary reports can then summarize the calling activity and associated usage costs by these levels.

Employees

The Employee Database contains information about your organization's employees that is relevant to the TBS. It includes such information as your employees' names, telephone extensions, authorization codes, and their locations within the organizational hierarchy. This information is required to cost and allocate telephone calls to the proper extensions and cost centers within your organization.

External Parties

The External Parties Database contains information about individuals or companies with whom you have regular contact. It includes such information as the external party's name, address, telephone number, and account code. Use this database to define the telephone numbers and optional account codes for your customers and contacts so you can identify commonly called telephone numbers on your detail and summary reports. This database can also be used to maintain a list of your frequently called customers or clients.

Roles/Projects

The Roles/Projects Database contains information about the different roles or projects that require reporting in the TBS. It is used to assign extensions, authorization codes, account codes, or dedicated trunk groups to projects or personnel for reporting purposes. For example, it can contain information on individuals or companies who use dedicated extensions but are not included in the Employee Database (for example, contract workers). It can also contain information on projects that require dedicated extensions and, therefore, require a name and organizational position for reporting.

Asset Assignments

This database defines how the different assets are assigned to the corporate entities in the Employee, External Parties, and Roles/Projects Databases.

Telephone Configuration

The Telephone Configuration Database is the TBS's main costing database. It combines rate tables, location books, and carrier pricing templates to calculate usage costs for the various trunk groups that are defined for the sites in your organization. It also calculates additional fixed costs, which can be added to the basic usage costs of these trunk groups. As well, it allows you to assign various reporting groups to calls for the system's detail and summary reports.

When calls are made through the trunks in these trunk groups, the TBS uses the Telephone Configuration Database to calculate their total costs. It can then assign these costs to the appropriate extensions (and, therefore,

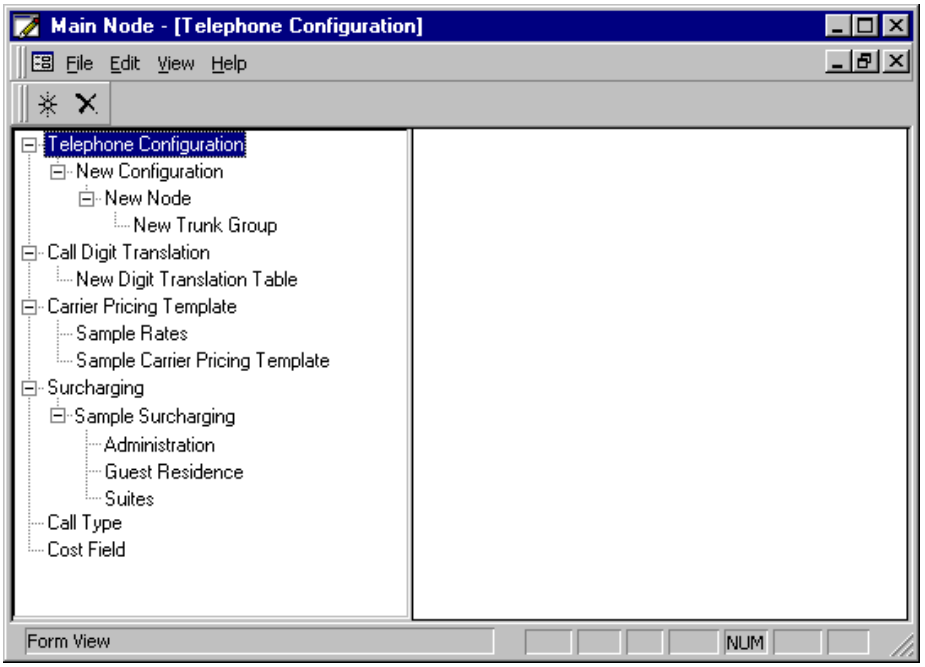
personnel), as well as any defined organizational hierarchy levels within your company.

The following is a summary of some of the features of the Telephone Configuration Database:

- You can define multiple telephone configurations, call digit translations, and carrier pricing templates. This allows you to set up multiple costing scenarios for a specific location, and then compare rates from different carriers based on your telephone usage patterns. This way, you can find out the true savings of using different carriers.
- This single editor allows you to define multiple telephone configurations, and easily assign any predefined call digit translations and carrier pricing templates to them.
- The Telephone Configuration navigation tree allows you to easily view your configuration information for each system. Therefore, you can easily make any corrections to your configuration for all of your systems.
- The Bill Party Surcharge function is used to define and apply additional charges to calls over and above the standard charges calculated using the Telephone Configuration Database. These surcharges are assigned to bill (or call) parties—typically, the extension from which the call was placed, rather than the trunk line over which the call was transmitted. This feature is used primarily in the hospitality and campus billing market where the TBS can be used to bill guests and other users.

Figure 6 is an example of the Telephone Configuration Database editor:

Figure 6 Telephone Configuration Database editor



Location Books

The Location Books function is used to define the location books (distance-based, latitude and longitude, and non-distance-based), and virtual private network books, which are used by the TBS. Location books serve two purposes in calculating costs for the TBS. Their first and primary purpose is to find a meaningful location name for the source and destination of a phone call. The second purpose is to obtain additional rating information, which is used to determine the cost of a call. That is, it identifies the physical or virtual locations of calls so that the TBS can apply the appropriate usage costs to them based on their distance or codes.

Rate Tables

The TBS includes a set of common rate tables provided by different telecommunications carriers. These rate tables provide the TBS with the required rates and coverage areas used to identify how the calls to different locations are costed. This way, the TBS knows which calls are costed with which rates. Simply select these predefined rate table files from the Telephone Configuration Database.

In most cases, you do not need to edit these rate tables. Your supplier can provide you with the latest rate tables as they are updated. If, however, you want to review or modify the rate tables included with the TBS, or if you want to create new rate tables, then use the Rate Table editor to do so.

Taxes

The Tax Definition editor is used to define the taxes that are applied to the telephone usage costs for your system. For example, if you want to add a sales tax to all usage costs calculated for the main node, then enter this tax value in this editor. You can then select it from the Tax Information fields of the Node Information editor. If your system requires compound taxes, then you must calculate them first, and then enter the resulting value in these fields.

Call Database

The Call Database editor is used to display and edit the call records stored in the Call Database. The Call Database contains all of the call records that have been collected from the switch. In some cases, it may be necessary to edit or delete some call records (due to invalid fields, such as corrupted dates or IDs). This allows you to remove bad or unwanted sections of the database or replace invalid dates with valid dates.

View menu

The **View** menu contains commands that are used to display or hide the TBS's graphical toolbar and status bar. As well, you can clear the contents of the **Alarms** pane and select the data to be displayed in the **System Tasks** pane.

To access these functions, click **View** from the main window, and then select from the following menu options:

- **Toolbar**
- **Status Bar**
- **Clear Alarms Pane**
- **Settings**

Tools menu

The **Tools** menu accesses the commands that manage the TBS's main processes. Use these commands to start, stop, schedule, and configure the data collection, call costing, and data transmission processes.

To access these commands, click **Tools** from the TBS main window, and then click the following menu options. Note that you can also click the corresponding icons in the toolbar.

Collection

The **Collection** menu accesses the functions that manage the data-collection process.

Start Collection: Starts the data collection in either batch or real-time mode.

Stop Collection: Stops the data collection process.

Schedule Collection: Accesses the **Scheduler** to schedule data collection at a later date and time.

Configuration: Defines the parameters used by the TBS to communicate with and collect data from the CS 1000M, CS 1000S, or Meridian 1 system.

Costing

The **Costing** menu accesses the functions that manage the call costing process.

Start Costing: Starts the call costing process.

Stop Costing: Stops the call costing process.

Schedule Costing: Accesses the **Scheduler** to schedule call costing at a later date and time.

Configuration: Defines the costing parameters in the Telephone Configuration Database.

Transmission

The **Transmission** menu accesses the functions that manage the data transmission process.

Start Transmission: Starts data transmission in real-time or batch mode.

Stop Transmission: Stops the data transmission process.

Schedule Transmission: Accesses the **Scheduler** to schedule data transmission at a later date and time.

Configuration: Defines the parameters used by the TBS to communicate with and transmit data to an external source, such as a Property Management System (PMS).

Options menu

The **Options** menu accesses the **System Configuration** function. To access this function, click **Options > System Configuration** from the main window.

System Configuration

The **System Configuration** function allows you to set up system options, data collection and transmission parameters, and alarm thresholds.

System Tab**:** This tab contains processing parameters for the call records.

Collection Tab: This tab contains the connection and communications parameters for data collection.

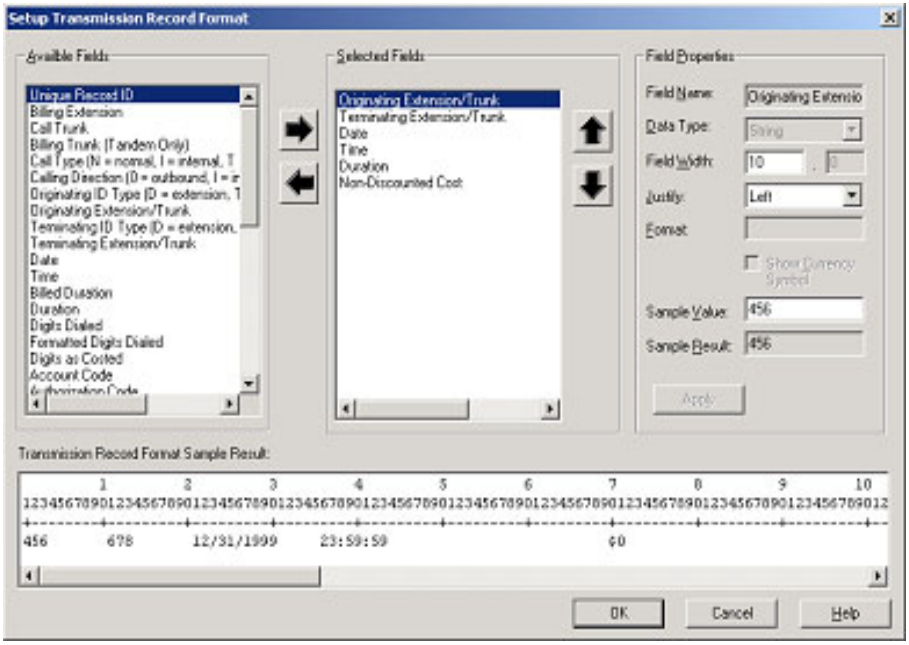
Transmission Tab: This tab contains the connection and communications parameters for data transmission, as well as the transmission setup configuration.

Alarms Tab: This tab contains any alarm thresholds and their corresponding alarm messages. These messages appear in the **System Alarms** pane of the main window.

Setup Transmission Record Format Fields

The **Available Fields** list box in the **Transmission** tab contains all of the fields you can select for your record format. The **Selected Fields** list box contains all the fields you selected from the **Available Fields** list box (see Figure 7). These fields will be included in the output stream during data transmission.

Figure 7 Setup transmission record



The following is a list of the field names that you can select.

Billing Extension: This is the extension that is billed for the call. On an outgoing call, this is the extension that placed the call. On an incoming call, it is the extension that received the call.

Call Trunk: This is the trunk that carried the call.

Billing Trunk (Tandem Only): On a tandem call, two trunks are involved in the call. The TBS creates two charge records, one for the incoming call on the originating trunk and the other for the outgoing call on the terminating trunk. When rating the incoming call, the originating trunk is considered to be the Call Trunk because it is the one carrying the inbound traffic. The terminating trunk is the Billing Trunk because it can be used through the **Corporate Directory** trunk assets for billing back to a corporate entity. Conversely, when rating the outgoing call, the terminating trunk is considered to be the Call Trunk because it is the one carrying the outbound traffic. The originating

trunk is the Billing Trunk because it can be used via the Corporate Directory trunk assets for billing back to a corporate entity.

Call Type (N=Normal, I=Internal, T=Tandem): A Normal call designation is given to an outbound or inbound call involving an on-net party and an off-net party (for example, either the originating ID or the terminating ID is an extension, and the other ID is a trunk). An Internal call designation is given to calls involving two on-net parties (for example, both originating and terminating IDs are extensions). A tandem call involves two off-net parties (for example, both originating and terminating IDs are trunks).

Calling Direction (O=Outbound, I=Inbound): An outbound call is one placed by an on-net party (an extension) to an off-net party (for example, a trunk is used to reach the off-net party). An inbound call is a call coming from an off-net party (for example, a trunk carries the call into the switch) that terminates at an extension.

Originating ID Type (D=Extension, T=Trunk): This designates whether the originating party of the call is a trunk or an extension.

Originating Extension/Trunk: This is the actual identifier for the originating party (for example, the specific extension or trunk number of the originating party).

Terminating ID Type (D=Extension, T=Trunk): This designates whether the terminating party is a trunk or an extension.

Terminating Extension/Trunk: This is the actual identifier for the terminating party (for example, the specific extension or trunk number of the originating party).

Date: This is the date on which the call was made.

Time: This is the time of day at which the call was made.

Billed Duration: This is the duration of the call used for billing. This is the actual duration of the call rounded according to the specified rounding parameters set by the carrier.

Duration: This is the actual duration of the call in seconds.

Digits Dialed: These are the digits dialed that were recorded and output by the switch in the CDR stream.

Formatted Digits Dialed: These are the digits formatted after processing by the costing function according to its call digit translation, access codes, and carrier pricing templates.

Digits as Costed: These are the digits that were used by the costing function to determine the call location and carrier pricing. These are the original digits dialed after call digit processing and access code removal by the costing function.

Account Code: This is an additional code dialed on a call for charge-back purposes, often used by legal, accounting, and consulting firms to identify a specific client for charge back.

Authorization Code: This is an additional code dialed on a call to authorize and identify the individual placing the call. This is often used in campus environments when calls need to be placed from anywhere within the campus.

Calling Line ID (CLID): This identifies the telephone number of the calling party on an inbound call.

Dialed Number Info Service (DNIS): This identifies the number dialed by the calling party to reach the company.

Area Code & Exchange (NPANXX): This is the North American numbering plan area code and exchange dialed on the call. On non-North American calls, this field contains the dial code of the location that matched the digits/CLID on the call. This is used when looking up the call's location in the location book specified in the Telephone Configuration Database.

Location: This is the city name of the called/calling location, which is looked up in the specified location book using digits/CLID on the call.

Province/State: This is the province or state name of the called/calling location, which is looked up in the specified location book using digits/CLID on the call.

Country: This is the country name of the called/calling location, which is looked up in the specified location book using digits/CLID on the call.

Route: This is the route designation for the call specified by the Telephone Configuration Database.

Call Cost: This is the basic cost of the call as determined by the Telephone Configuration Database before surcharging.

Tax on Call Cost: This is the total tax charged on the above-listed Call Cost according to the taxes specified in the Telephone Configuration Database.

Call Cost + Taxes: This is the sum of the above-listed Call Cost and Tax on Call Cost values.

Surcharge: This is the surcharge applied to the call according to the Surcharging parameters specified in the Telephone Configuration Database.

Tax on Surcharge: This is the tax amount on the surcharge calculated according to the taxes specified in the Telephone Configuration Database.

Call Cost + Surcharge: This is the Call Cost plus the Surcharge without taxes.

Tax on (Call Cost + Surcharge): This is the total tax on the Call Cost and Surcharge.

Call Cost + Surcharge + Taxes: This is the total of the above-listed Call Cost and the Surcharge values and the taxes on those values.

Tax 1, Tax 2, Tax 3 & Tax 4: Up to four different taxes can be specified in the Telephone Configuration Database. These fields contain the tax amount calculated on the above-listed Cost value plus the Surcharge value for the four specified taxes.

Off End Taxes: This is the tax applied to any charges that have gone off end from a tie-line node programmed in the Telephone Configuration Database.

User Defined: The User Defined value is any constant value that you wish to include in a specific location of the output data stream during data

transmission. For example, the standard HOBIC record format for hotels may require a 3-letter hotel ID column, which you can enter in the **User Defined** field as a constant value (for example, HB1). This value is included in the record that is sent to a downstream property management system. When you select **User Defined**, it uses the constant value that you entered in the Sample Value field (located next to the selected fields list). As with the other fields defined in the data transmission, you can select multiple **User Defined** fields and position them at any location in the record.

TBS Display option

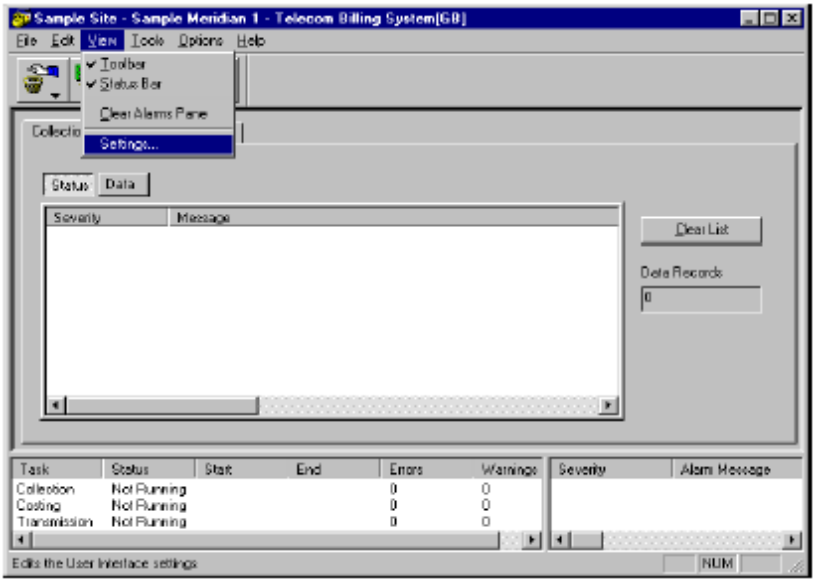
The **TBS Display** option for collecting, costing, and transmitting call records negatively impacts system performance by consuming system resources.

Disabling the Display option

To improve system performance, disable the **TBS Display** option:

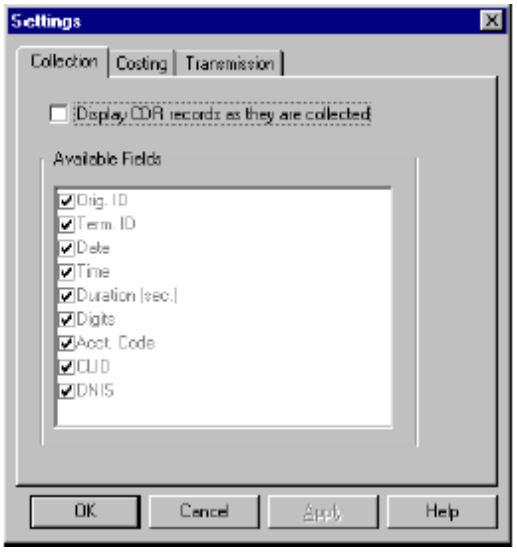
1 In the TBS application, select **View > Settings**, as shown in Figure 8 on page 64.

Figure 8 TBS



The **Settings** dialog box opens with the **Collection** tab selected. See Figure 9.

Figure 9 Settings dialog box—Collection tab

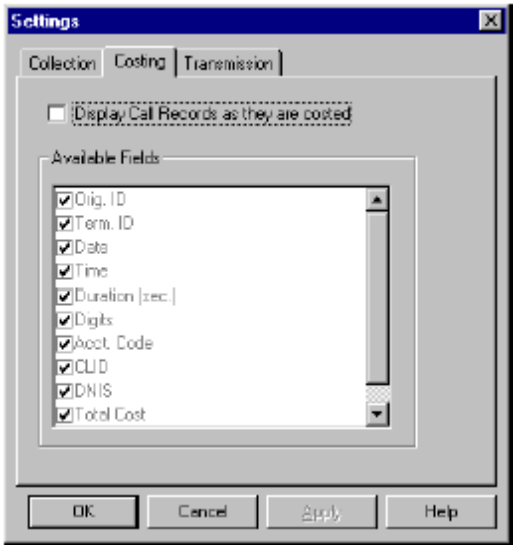


2 Ensure that the **Display CDR records as they are collected** check box is cleared.

3 Click the **Costing** tab.

The **Settings** dialog box—**Costing** tab appears. See Figure 10.

Figure 10 Settings dialog box—Costing tab



4 Ensure that the **Display Call Records as they are costed** check box is cleared.

5 Click the **Transmission** tab.

The **Settings** dialog box—**Transmission** tab appears. See Figure 11.

Figure 11 Settings dialog box—Transmission tab

6 Ensure that the **Display Call Records as they are transmitted** check box is cleared.

7 Click **OK**.

Getting started

This section describes how to access the TBS and set it up for initial use. Use the following instructions and examples to configure the TBS to collect and process the CDR records that are output from your system.

This section includes:

- An overview of a call record and how the TBS applies costs to it
- The options that you must activate in the system to allow for CDR data collection

- How to connect and set up a CDR buffer unit, specifically the MDR-2000 Intelligent Storage Device (ISD)
- How to run the TBS for a system
- How to set up and start data collection for the TBS
- How to set up the TBS Telephone Configuration Database (including entering node information, rate tables, and location books)

The following instructions and examples are intended to assist you in setting up the TBS for your own configuration. Since each telephone system is configured differently and each OTM installation is different, these examples cannot predict every scenario. You should, therefore, use these examples to teach yourself how to set up your hardware and configure the TBS software to work with this hardware. These examples are designed to account for the majority of cases and provide you with valuable assistance in getting started.

Before using the TBS, you must install and configure it as part of the OTM system. Refer to *Optivity Telephony Manager: Installation and Configuration* (553-3001-230) for complete details on installing the TBS as part of OTM and assigning it to a site and a system.

Overview of a call record

Before you enter your system configuration and update your TBS databases, you should first understand the nature of the data that is output from the system. This will help you to construct your system configuration databases to match your system. This section describes the components of a call record as well as how it is processed and costed by the TBS.

CDR call records, which are output from the system and are collected by the TBS, contain the key information to producing costing reports. The following is a summary of what happens to a call record:

System outputs call records

When a user places or receives a telephone call, the system records its information as a CDR record (call record). This record contains such information as the call's start date and time, its duration, the trunk it went out on, its associated line, and the digits dialed. This data is sent to the system's

Serial Data Interface (SDI) port. From here, an application or hardware device must record it so it can be processed. This can be a buffer unit that is connected to the system's SDI port (recommended), or even a PC running the TBS for a direct connection.

As call records are output from the system, the TBS collects this data either through a buffer unit, such as the MDR-2000 ISD, or directly to the PC. Buffer units are recommended for collecting CDR data since they can continuously collect and safely store these call records. A buffer unit is portable enough to be located close to the system. Some may also have security features to allow for safe data storage (for example, battery backups). Whichever way you decide to collect the call records, remember that unless something is collecting the call records output from the system, they will be lost.

Figure 12 displays the movement of a call record from the system through a buffer unit to the TBS software program on a PC. Notice that modems can be used to communicate with the system and buffer units from distant locations.

Figure 12 System block diagram

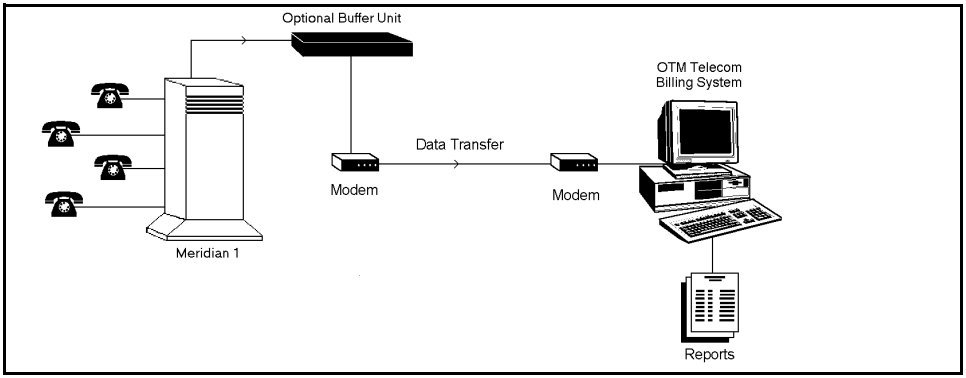
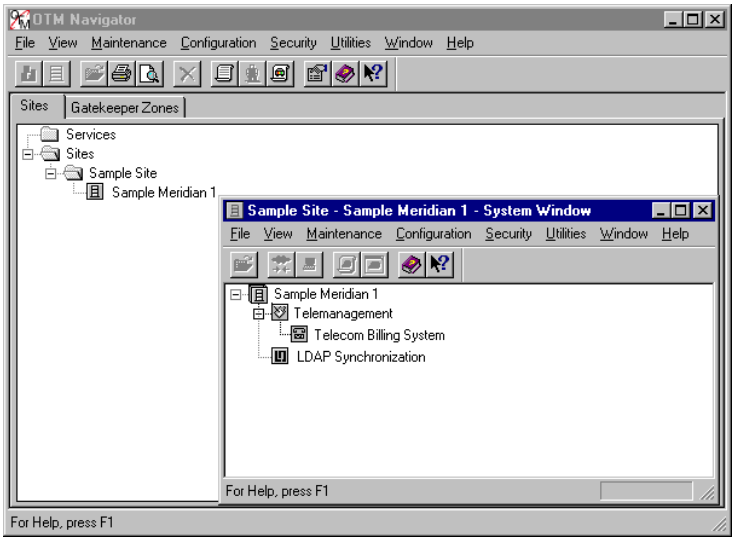


Figure 12 represents a single "system." This system usually represents a CS 1000 or Meridian 1 system or a physical location in the TBS software and contains the actual database files for it. Before attempting to use the TBS, you must add it as an application to the appropriate system.

Figure 13 is an example of how the sample system is set up.

Figure 13 Sample system setup

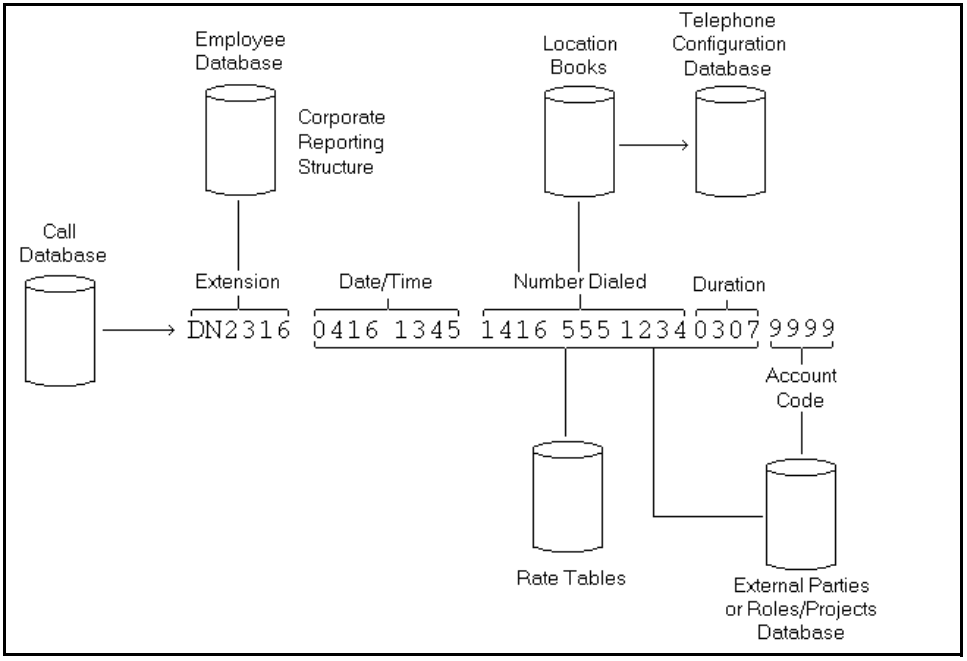


The TBS collects call records

The TBS collects call records from the system through the buffer unit, and formats and appends them to the end of the Call Database. The Call Database is an indexed collection of call records that reflects the calling activity of the system.

Figure 13 on page 71 is a breakdown of the information found in each call record. Notice how the TBS databases use each component of the call record:

Figure 14 Sample call record allocation



Processing X (transferred) records

Your CS 1000 or Meridian 1 can be programmed to output transferred call records (also known as X records) as individual call records. Where required, you can set up the TBS to process and report on these X records. For example, you may want to more accurately identify calling activity within the different departments in your organization. Note that this option affects call volumes and, therefore, makes any costing based on volume plans inaccurate.

With this option enabled, call records representing calls that have been transferred are broken down into individual call records based on the call transfer. For example, an incoming call that has been transferred once, becomes two call records. The first call record is identified as an incoming call to a specific extension. The second call record is identified as an internal call from the first extension to the second extension. If this option is disabled, then this is only identified as a single call record.

To set up the TBS to process X records, you must edit the Script Configuration initialization file (ScriptConfig.ini). This text file, located in your site/system directory (for example, C:\Nortel\Common Data\Sample Site\Sample System\), identifies how the X records are processed. By default, it is set to not process X records.

The following is an example of this file (with the ProcessXRecords option set to NO):

```
[SL1NEW]
ProcessXRecords=No
```

To change its settings so that the TBS can process X records, open the file using a text editor such as MS Notepad, and change the text to read as follows:

```
[SL1NEW]
ProcessXRecords=Yes
```

Save this file and run the TBS to process these records. You are prompted with a warning message stating that X records are being processed.

For real-time CDR collection of X type records, select the script SL1NEW.COL. To collect these records from an MDR-2000 ISD, select the script M2KIMG_SL1NEW.COL. For more information on these scripts, refer to Appendix , “Appendix A: Scripts,” on page 249.

Processing B (Abandoned call) records

With International Release 18 Group H and North American Release 20, B (Abandoned call) records are output when the Time to Answer feature is active and New format CDR is selected for CDR TTY output (FCDR = NEW in LD 17). B records are only output to CDR – Teletype devices.

B records are output when:

- an unanswered incoming trunk disconnects and ABAN = YES in LD 16

- internal CDR is equipped and an unanswered internal station disconnects from another internal station which has ABDA class of service

Prior to Release 23, the CDR B record provided information only for abandoned calls on ringing. With the Release 23 feature CDR on Busy Tone, a B record is produced when the originator of an incoming or internal call disconnects after receiving a busy tone. The CDR on Busy Tone B record information is displayed on the third line of the CDR B record for customers with the New CDR format (FCDR) configured.

For real-time CDR collection of B type records, select the script SL1NEW.COL. To collect these records from an MDR-2000 ISD, select the script M2KIMG_SL1NEW.COL. For more information on these scripts, refer to Appendix , “Appendix A: Scripts,” on page 249.

The TBS costs call records

Once the TBS collects the call records, it runs them through a series of calculations to apply costs to them. It then stores these costed call records in the Call Database. Each process uses the parameters stored in the Telephone Configuration Database (you will see how to configure these later in this chapter).

The following is a summary of how the call records are processed:

1. The Call Digit Translation table of the Telephone Configuration Database translates the digits dialed to remove or edit any access codes.

2. The TBS looks up the trunk on which the call went out to see which service definition to check. It looks this up in the table of the Telephone Configuration Database’s Service Definition.

3. The TBS applies any minimum call duration and network connect time adjustment values to the call.

4. The TBS identifies the Carrier Pricing Template assigned to the trunk. This indicates the type of call, how the number should be formatted on the report, and which rate structure should be used to cost the call.

5.The TBS applies any fixed costs to the call.

This completes the overview of how the TBS processes a call record.

Setting up the TBS: Example scenario

The example setup is based on the following scenario:

- The Acme Company has its head office located in Dallas, Texas. The telephone number for its head office is (214) 555-1111.
- The telephone system requires that users enter the access code “9” before making any outgoing calls.
- There is one trunk route with 46 members on the Meridian 1. These are configured as trunks 2001 to 2046.
- The Meridian 1 that is located in the switch room of the Acme Company head office building requires an MDR-2000 ISD to collect CDR data. A modem is attached to it to allow for communications between it and a PC in another room. It has a dedicated extension number of 222.
- The PC on which the TBS is installed is located in another room of the same building. A modem is attached to this PC's COM1 port and is used to connect to the MDR-2000 ISD.

Setting up the TBS: Summary

The following is a summary of the steps required to set up and configure the TBS to process call records. You need to perform these steps only when you first install and use the TBS or if your configuration or hardware changes:

1.Ensure that the system is set up to properly output CDR data.

2.Install and set up the buffer unit.

3.Install any rate tables purchased for your dialing plan.

4.Run the TBS so it can be configured.

5.Set up and test the data collection process before running it in a real-time situation.

6.Obtain the List Trunk and Member (LTM) values from the Meridian 1.

7.Set up the telephone configuration.

8.Test the telephone configuration.

For more details on each of the TBS functions and features described in the following sections, refer to the online Help included with the TBS. For more details on the hardware components included with the OTM TBS (for example, buffer units, modems), refer to their associated documentation.

Step 1: Ensure that the system is set up properly

For the TBS to collect and process CDR data, the system must output the data in the proper format. You must, therefore, enable the required features and options in the system overlays. This section describes the options that are required for the TBS to process the CDR data.

Note: This document is not intended to describe all options related to CDR data. For complete details on the available CDR options and information on configuring CDR, see *Call Detail Recording, Description and Formats* (553-2631-100) in the Meridian 1 documentation library.

Select CDR output format

1 In LD 17, select either NEW or OLD format CDR output (FCDR=NEW). The TBS contains script files for supported buffer units, including the MDR-2000 ISD. As well, it can be configured to support both NEW and OLD CDR formats.

Auxiliary Identification output in CDR record

2 In LD 15, configure the Auxiliary Identification to be output in CDR (AXID=Yes). The AXID field is not captured by the TBS, but is required to ensure that data fields output in the CDR record appear in the expected positions.

Configure routes for CDR output

3 In LD 16, configure the routes that output CDR data (CDR=Yes), and determine the type of CDR data to output. For example, you may want to record all incoming calls and only outgoing toll calls.

4 Ensure that the SDI port for your system is configured to match the settings on the buffer unit. If you plan to collect data at a higher baud rate, you may need to change both the SDI port and the buffer unit settings.

The default settings for the MDR-2000 ISD are:

- Baud = 1200
- Data Bits = 8
- Parity = None
- Stop Bits = 1

If you plan to use the default values for the MDR-2000 ISD, you must use the same values for the SDI port.

Step 2: Install and set up buffer unit

The TBS collects CDR data from the system either directly or through one of several types of buffer units. Based on your configuration, you may need to collect the CDR data from a buffer unit in a specific format and share it between different applications.

For this setup, assume that the TBS is collecting CDR data from the MDR-2000 ISD. This section describes how to connect the MDR-2000 ISD to the system and the PC via a modem connection. This provides you with an

example by which you can learn how to set up the other OTM-supported buffer units. Since other buffer units have different connection and communications requirements, you should refer to their documentation for more details on setting them up.

Security precautions for MDR-2000 ISD

The MDR-2000 ISD is a precision electronic product. Remember to review all of the documentation included with the MDR-2000 ISD before attempting to install and use it. Failure to observe the precautions and guidelines outlined in the documentation may lead to product failure, damage, and invalidation of all warranties.

Before handling the MDR-2000 ISD, take all proper electrostatic discharge (ESD) precautions, including personnel and equipment grounding:

- Do not rest the MDR-2000 ISD on the power cord. A damaged power cord can cause fires or electrical shocks.
- Do not use the MDR-2000 ISD in damp, dusty, or dirty places.
- Store spare components in proper antistatic material.
- Make sure equipment is turned off before handling or changing components.

Caution: ESD damage is not always immediate and can result in failures after months of operation.

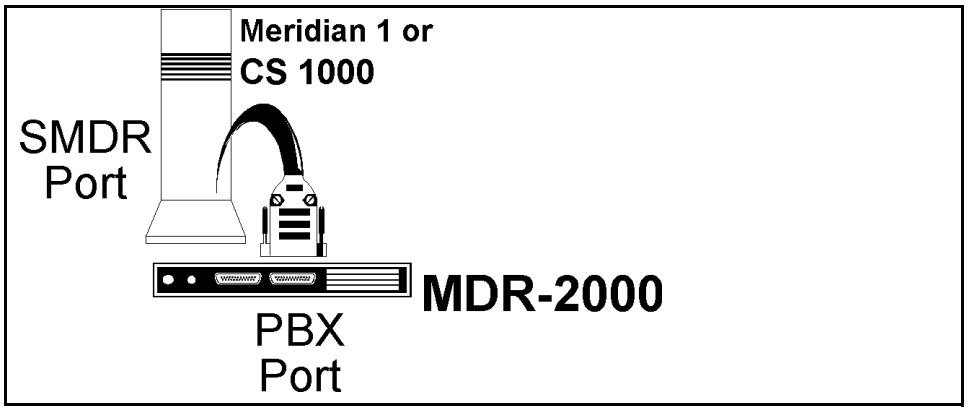
Connect MDR-2000 ISD to system and PC

The first step is to connect and install the MDR-2000 ISD onto the system. It can then collect and store call records as they are output from the system. You must then connect the PC to the MDR-2000 ISD so the TBS can collect the call records from its database files. For this example, you configure and connect modems to the MDR-2000 ISD and to the PC.

Perform the following steps to connect the MDR-2000 ISD to the system, and then to the PC via a modem connection.

1. Locate the system's SDI port.
2. Connect the MDR-2000 ISD to the system's SDI port using an RS-232C cable. See Figure 15 on page 79:
   - **a** Connect one end of the RS-232C cable to the PBX port on the MDR-2000 ISD, and the other end to the SDI output port on the system.
   - **b** Use a male DB-25 connector when connecting to the PBX port of the MDR-2000 ISD.

Figure 15 Meridian 1 to MDR-2000 ISD

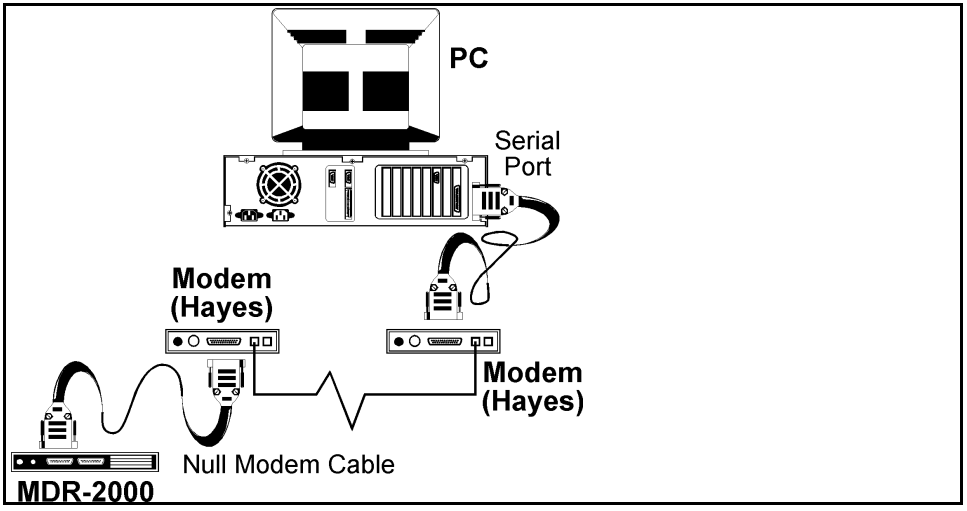


3. Connect the MDR-2000 ISD to the first modem:
   - **a** Connect the null modem cable, which is provided with the MDR-2000 ISD, from the Modem port of the MDR-2000 ISD to the serial port of the modem.
   - **b** Connect a telephone line cord from the "To Line" output jack of the first modem to the telephone jack.
4. Connect the PC to the second modem. See Figure 16 on page 80.

a Connect a modem cable from an available communications port (for example, COM 1) on the PC to the serial port of the second modem. If you have an internal modem attached to your PC, ignore this step.

b Connect a telephone line cord from the "To Line" output jack of the second modem to the telephone jack.

Figure 16 MDR-2000 ISD to modems to PC



5 Plug in and turn on the MDR-2000 ISD:

a Plug in the MDR-2000 ISD's AC adapter into the electrical outlet.

b Insert the AC power supply connector into the 9 VDC jack of the MDR-2000 ISD.

6 Plug in and turn on the modems:

a Plug in the modems' AC adapters into the electrical outlets.

b Insert the AC power supply connector into the power jack of the modem.

7 Test the MDR-2000 ISD to ensure that it is collecting data. Once you have turned on the MDR-2000 ISD, all the lights flash briefly and the RUN and BMT indicators remain on. After the second valid call record is obtained, only the RUN indicator remains on. The first valid call is used to populate the buffer registries when the MDR-2000 ISD has been turned off and on.

   The PBX indicator flashes as the MDR-2000 ISD receives data. This indicates that the data stream is being received. If the PBX light does not flash and you are sure that a call has been made, check the following:

   - If you require a null modem adapter between the system and the MDR-2000 ISD, then ensure that it is connected between the system's SDI port and the PBX port of the MDR-2000 ISD.
   - Ensure that CDR is turned on for the trunk route you are using.

Verify that the MDR-2000 ISD is collecting data

Access the MDR-2000 ISD to view and verify that the incoming data stream is valid. To access the MDR-2000 ISD, perform the following steps.

1 Run a terminal program such as Windows HyperTerminal.

2 Dial up the telephone number of the MDR-2000 ISD. This is the number where the MDR-2000 ISD was connected via its modem. If the PC is connected directly to the MDR-2000 ISD, then you can simply start typing the commands to edit the parameters. For this example, enter **`222`**.

3 Type **`<Ctrl-V> I D <Enter>`**. This verifies that you are communicating with the MDR-2000 ISD. The response is the serial number of the MDR-2000 ISD.

4 To view the data, type **`<Ctrl-V> D U <Enter>`** (you may need to type this twice). If the data appears incorrect (for example, it contains random characters), then there is probably a communications problem.

Changing communications parameters

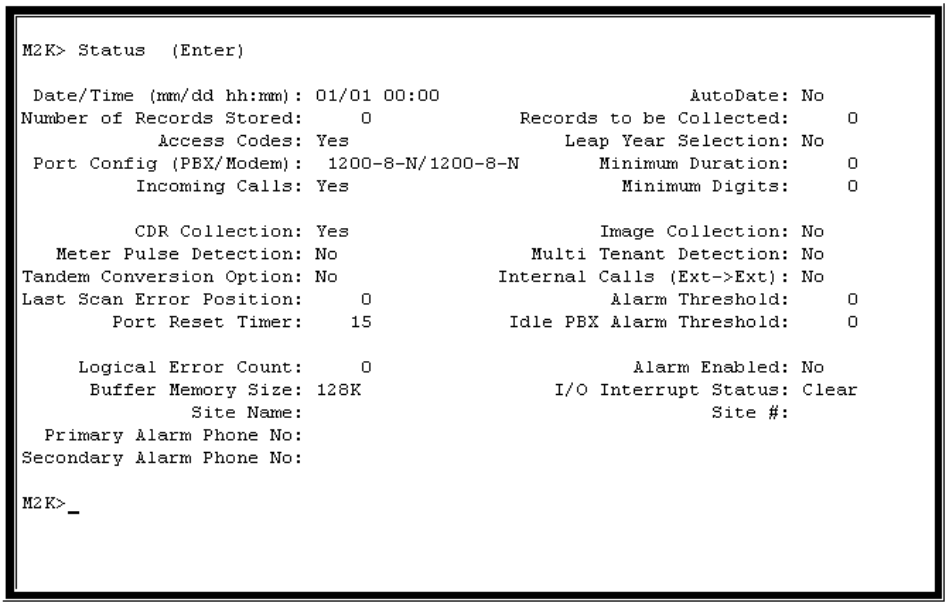
The MDR-2000 ISD default communications parameters may be different from the CS 1000 or Meridian 1 system. For example, the MDR-2000 ISD baud rate defaults to 1200, and the system may be 9600. If they are different, you must change the communications parameters of one or the other.

The following example demonstrates how to change the communications parameters of the MDR-2000 ISD and also set it for NEW CDR format. If you want to change the communications parameters on the system, refer to the documentation provided with it.

To change the MDR-2000 ISD's communications parameters, access the MDR-2000 ISD interface using any terminal program running directly from your PC. The following example demonstrates this process.

1. Run a terminal program such as Windows HyperTerminal.
2. Dial up the telephone number of the MDR-2000 ISD (for example, 222). This is the number where the MDR-2000 ISD was connected via its modem. If the PC is connected directly to the MDR-2000 ISD, then you can simply start typing the commands to edit the parameters.
3. Access the MDR-2000 ISD interface by typing **<Ctrl-V> I M <Enter>**. The M2K> prompt appears.
4. Check the status of the MDR-2000 ISD by typing **ST <Enter>**. The status appears similar to Figure 17.

Figure 17 MDR-2000 ISD status



```
M2K> Status  (Enter)

 Date/Time (mm/dd hh:mm): 01/01 00:00                    AutoDate: No
Number of Records Stored:     0          Records to be Collected:     0
            Access Codes: Yes                  Leap Year Selection: No
 Port Config (PBX/Modem):  1200-8-N/1200-8-N       Minimum Duration:     0
          Incoming Calls: Yes                        Minimum Digits:     0

          CDR Collection: Yes                     Image Collection: No
   Meter Pulse Detection: No                Multi Tenant Detection: No
Tandem Conversion Option: No              Internal Calls (Ext->Ext): No
Last Scan Error Position:     0                    Alarm Threshold:     0
        Port Reset Timer:    15           Idle PBX Alarm Threshold:     0

     Logical Error Count:     0                      Alarm Enabled: No
      Buffer Memory Size: 128K                I/O Interrupt Status: Clear
               Site Name:                                 Site #:
  Primary Alarm Phone No:
Secondary Alarm Phone No:

M2K>_
```

5 To change the baud rate for the modem port on the MDR-2000 ISD to 9600, type **`SE BA <Enter> 9600 <Enter>`**. This responds as SE (Set Options) BA (Baud) PBX (PBX default) 9600. The first <Enter> in this line selects the default baud rate for the PBX port on the MDR-2000 ISD.

6 To quit and exit from this interface, **`<Enter> Q`** (quit).

Note: If you are changing the baud rate for the modem, ensure that the modem answers at the desired speed first. For example, if you are using the Windows HyperTerminal program to access the modem, it prompts `Connect 9600` when you are connected.

Note: Once you have completed accessing the MDR-2000 ISD, remember to exit from it by typing **Q** (quit). If your communications session is interrupted (for example, by a disconnected line or a power failure), then you lose your edits.

Notes for customization strings

In certain cases, you may need to change the customization strings of the MDR-2000 ISD to match the output of the system. If you need to change the customization strings, use the CU (Customize) command in the MDR-2000 ISD interface and change the strings as necessary. Refer to the documentation provided with the MDR-2000 ISD for more details on what the customization strings represent.

Step 3: Install rate tables and location books

Before you configure the TBS, you must install the rate tables that reflect your telecommunications provider's rates. These provide such rates as long-distance calls charges for direct dialed calls to North America, as well as international long-distance charges. The TBS requires these rate tables to accurately apply costs to your long-distance calls.

As well as rate tables, you must install a set of location books for your software. Location books contain codes for the actual locations that are used by the rate tables to determine the charges incurred when calling these locations.

You can obtain rate tables from a rate service or from your dealer. Remember that the rate table files must be compatible with the TBS software. If in doubt, check with your supplier before purchasing any rate tables.

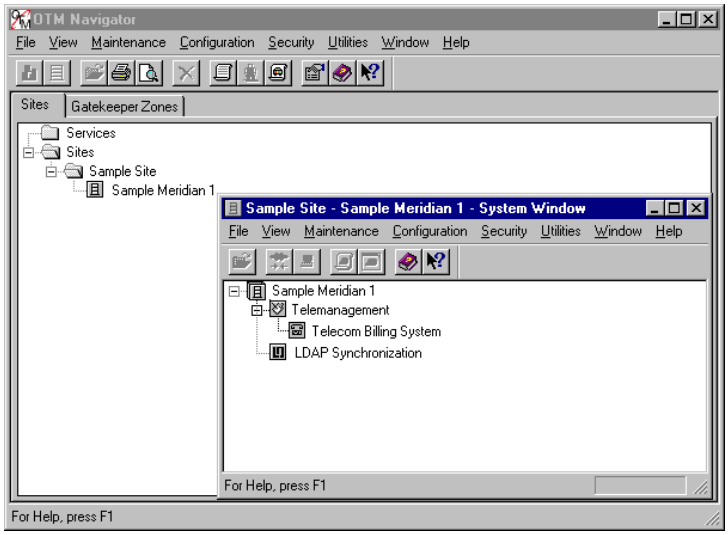
To install the rate tables and location books, simply follow the instructions included with them. Remember to install the rate table files onto your OTM TBS directory so you can select the appropriate rate table files when you are defining your carrier pricing templates.

Step 4: Run TBS so it can be configured

If OTM is not already running, click **OTM Navigator** from the StartUp program group. In the **OTM Navigator**, open a predefined site and system (for example, Site=Acme Company, System=Head Office).

Once you open the site and system, the window shown in Figure 18 appears.

Figure 18 OTM Navigator



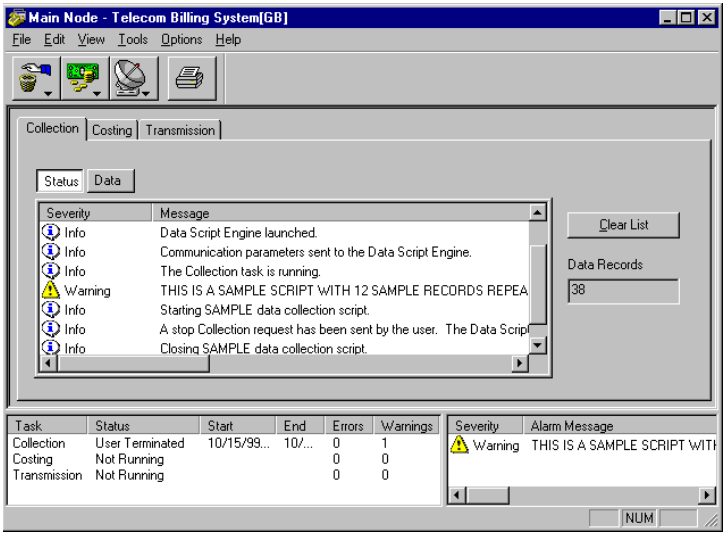
From the selected site and system in the OTM Navigator, click **Telemanagement**, and then click **TBS**.

This accesses the TBS application main window, as shown in Figure 19 on page 86, from which you can set up the communications parameters, telephone configuration, and rate tables for initial use. You must also test the data collection and run reports to see if the data was collected and costed properly.

When you first run the TBS for a specific site and system, the Telephone Configuration Wizard appears. This allows you to optionally enter a basic telephone configuration for this site and system. Since you are not using the

Telephone Configuration Wizard to enter your configuration, leave these fields blank and click **OK** to access the TBS.

Figure 19 TBS main window


Main Node - Telecom Billing System[GB]
File Edit View Tools Options Help
Collection Costing Transmission
Status Data
Severity Message
Info Data Script Engine launched.
Info Communication parameters sent to the Data Script Engine.
Info The Collection task is running.
Warning THIS IS A SAMPLE SCRIPT WITH 12 SAMPLE RECORDS REPEA
Info Starting SAMPLE data collection script.
Info A stop Collection request has been sent by the user. The Data Script
Info Closing SAMPLE data collection script.
Clear List
Data Records
38
Task Status Start End Errors Warnings
Collection User Terminated 10/15/99... 10/... 0 1
Costing Not Running 0 0
Transmission Not Running 0 0
Severity Alarm Message
Warning THIS IS A SAMPLE SCRIPT WITH
NUM

Step 5: Set up and test data collection

Before you enter your telephone configuration, you should verify that the TBS is collecting data from the system in the correct format. This way, you can test the configuration against actual calls. To test the data collection, simply enter the data collection parameters, collect the call records from the system, and view them in the Call Database.

Enter data collection parameters

For the TBS to collect data from the system, you must enter the data collection parameters for the site and system. You should have already connected and configured your hardware (see previous sections entitled “Step 1: Ensure that the system is set up properly” and “Step 2: Install and set up buffer unit”). You need to access the System Configuration function’s Communications tab only to select the communications and data collection parameters.

In this example, you are collecting data from the Meridian1 or CS 1000S system through the MDR-2000 ISD buffer unit. Note that you can also collect data from other buffer units. You can also collect data directly from the system using a direct connection or from the DBA application (network connection).

For more information on setting up the TBS to collect data from the OTM DBA application, refer to the section entitled: "Setting up TBS to collect data from OTM DBA Application" on page 165.

To enter the data collection parameters for the TBS, perform the following steps.

1. From the TBS main window, click **Options > System Configuration**. The System Configuration dialog box appears.
2. Click the **Collection** tab and enter your communications and collection parameters. For example, enter the following values:
   - Type: Dial-Up
   - Phone No: 222
   - Redials: 3
   - Port: COM1
   - Baud Rate: 9600
   - Data Bits: 8
   - Parity: None
   - Stop Bits: 1
3. In the **Collection Script** box, enter the name of the script file that is used for this data collection. This file contains the instructions used to communicate with the buffer unit and collect data from it. The script filename you select depends on the type of buffer unit and the format of the data being collected. For example, if you are collecting data from the MDR-2000 ISD, then select MDR2000.COL. Refer to "Telecom Billing System (TBS) scripts" on page 249 for a list of supported buffer units and their corresponding script filenames.

In certain cases, you may want to report on transferred call records (also known as X records) and on Abandoned calls (also known as B records). With the X record option, call records representing calls that have been transferred are broken down into individual call records based on the call transfer. For more information on reporting on X and B records, refer to the sections, "Processing X (transferred) records" on page 72 and "Processing B (Abandoned call) records" on page 73. Note that X records cannot be processed if you are collecting data from the MDR-2000 ISD.

4 Click **OK** to select these options and return to the TBS main window.

Test data collection

Now that you have configured your hardware and entered the required communications parameters, you are ready to test the data collection. At this stage, you should only run a data collection as a test. Later, you can set up and invoke data collection once you have entered all of your system information and you are ready to run it live.

The following is an example to demonstrate how to test the data collection process. This example assumes the following:

- The system is outputting CDR data to the SDI port.
- The MDR-2000 ISD is directly connected to the system and is continuously collecting and storing the raw CDR data (call records) as they are output from the system.
- The TBS collects this CDR data from the MDR-2000 ISD and stores it in the Call Database.

To test the data collection for this scenario, perform the following steps.

1 Wait for some calls to be recorded by the system. Either wait for some calling activity on the system or make a few telephone calls. If the MDR-2000 ISD is properly connected to the system, it collects

and stores these call records as they are recorded by the system (note that the BMT light is out).

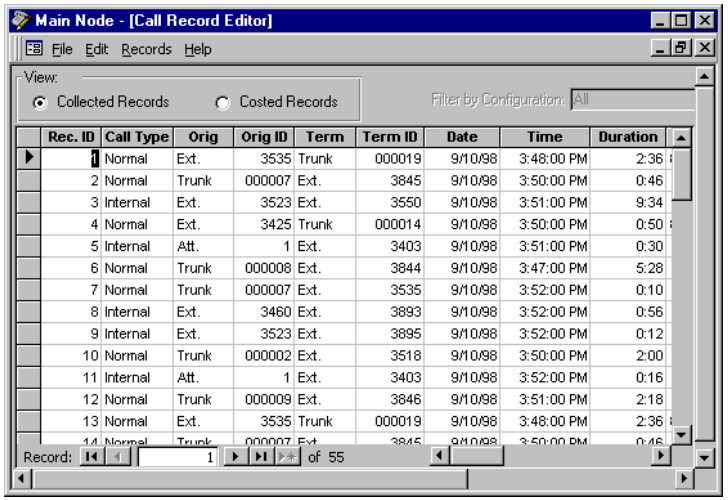
2 Start the data collection process by clicking **Tools > Collection > Start** from the TBS main window.

3 From the **Start Collection** dialog box, select the **Batch** option and then click **Start**. The TBS starts collecting the call records from the MDR-2000 ISD and places them in the Call Database. See Figure 20 on page 90.

4 During the data collection process, the TBS displays both the collection activities as well as the call records as they are collected. To view this information, click the **Collection** tab in the **System Tasks** pane. Click **Status** to view the status of the collection. Click **Data** from this tab to view the call records and verify that they are in the correct format.

5 Review the call records for any invalid fields. For example, check the trunk numbers and digits dialed for invalid values. The trunk numbers appear in the Orig ID or Term ID fields depending on the “Orig” or “Term” values. Check the first digits in the Digits Dialed fields to confirm the access codes. As well, check the call records’ dates and times to ensure that they match the date and time on the system.

Figure 20 Call Database


Main Node - [Call Record Editor]
File Edit Records Help
View:
Collected Records
Costed Records
Filter by Configuration: All
Rec. ID | Call Type | Orig | Orig ID | Term | Term ID | Date | Time | Duration
1 Normal Ext. 3535 Trunk 000019 9/10/98 3:48:00 PM 2:36
2 Normal Trunk 000007 Ext. 3845 9/10/98 3:50:00 PM 0:46
3 Internal Ext. 3523 Ext. 3550 9/10/98 3:51:00 PM 9:34
4 Normal Ext. 3425 Trunk 000014 9/10/98 3:50:00 PM 0:50
5 Internal Att. 1 Ext. 3403 9/10/98 3:51:00 PM 0:30
6 Normal Trunk 000008 Ext. 3844 9/10/98 3:47:00 PM 5:28
7 Normal Trunk 000007 Ext. 3535 9/10/98 3:52:00 PM 0:10
8 Internal Ext. 3460 Ext. 3893 9/10/98 3:52:00 PM 0:56
9 Internal Ext. 3523 Ext. 3895 9/10/98 3:52:00 PM 0:12
10 Normal Trunk 000002 Ext. 3518 9/10/98 3:50:00 PM 2:00
11 Internal Att. 1 Ext. 3403 9/10/98 3:52:00 PM 0:16
12 Normal Trunk 000009 Ext. 3846 9/10/98 3:51:00 PM 2:18
13 Normal Ext. 3535 Trunk 000019 9/10/98 3:48:00 PM 2:36
Record: 1 of 55

6 If the data appears invalid, then repeat the previous steps, checking to ensure that your hardware is connected properly and that you have the correct settings. Check the parameters on your system and the MDR-2000 ISD.

This completes the steps required to initiate a data collection and verify the call records.

Step 6: Obtain LTM from the system

Before you start entering the telephone configuration, you must first obtain the List Trunk and Member (LTM) report from the system. This provides you with valuable information on how to set up your configuration.

Note: If you have Internet Security and Acceleration (ISA), the LTM does not show any members for the service routes. You should print the Route Data Block (RDB) to determine the service routes associated with the ISA routes. All members indicated in the ISA route must be added to the associated service routes.

To obtain the LTM and RDB information for your configuration, access the system, and then print the associated LTM and RDB reports.

Step 7: Set up telephone configuration

The next step in setting up the TBS is to define the telephone configuration. This identifies how the TBS processes the call records. It involves assigning the appropriate rate tables and carrier pricing templates to your system's trunk groups, entering any call digit translations, and setting any reporting options.

Since defining the telephone configuration is a complex task, it is helpful to demonstrate how to define one using an example configuration. This example represents a typical configuration and helps you to set up your own configuration.

Note: This telephone configuration is only an example. When setting up your own configuration, you must enter your own company's system and rate information. Review all of the documentation provided with your system and by your service provider. This includes trunk route and member numbers, output format, and rate table names.

Summary of steps

The following summary outlines the steps that you must perform to define the telephone configuration for this example.

1.Access Telephone Configuration Database editor.

2.Update Call Type Definitions table.

3.Define Carrier Pricing Template.

4.Define Call Digit Translation.

5.Enter telephone configuration:

a. Create telephone configuration.

b. Add Main Node.

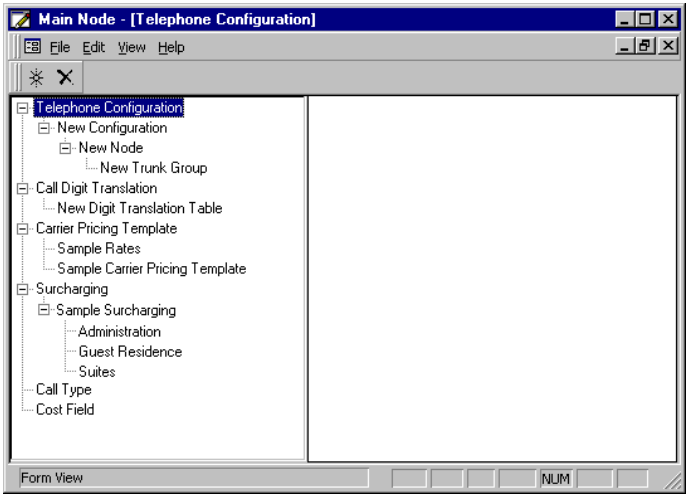
c. Add Long Distance Service Definition to Main Node.

Access Telephone Configuration Database editor

To access the Telephone Configuration Database tables, click **Edit > Telephone Configuration** from the TBS main window.

Figure 21 is a sample Telephone Configuration Editor. When you access this function for the first time, it appears with blank menu options in the **Telephone Configuration** navigation tree.

Figure 21 Telephone Configuration editor



Review the LTM report from the system to identify the call types for reporting. For example, you can set up the call types CO, DID, 800, and TIE. With this information, you can set up columns of costing details or cost summaries for these call types.

Update Call Type Definitions

The Call Type Definition function contains a list of the types of calls that may be used by your organization (for example, International, Local, and so on). You select these call types when you define the dialing patterns of your organization in the Carrier Pricing Template. Select these predefined call types when entering your costing and reporting options.

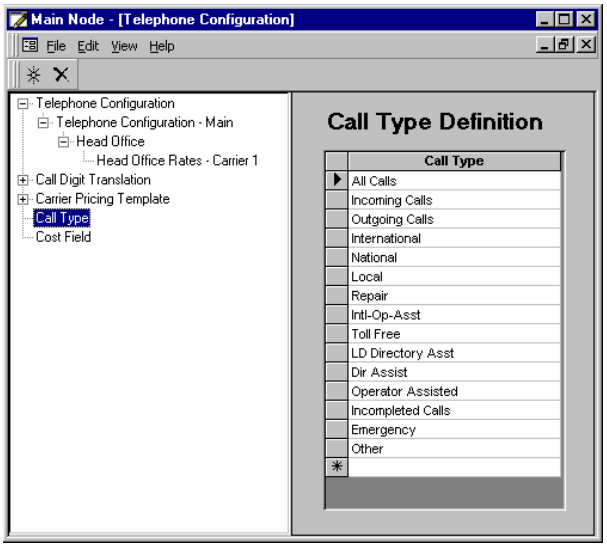
The Call Type Definition function lists a set of default call types, which you can select when entering your costing and reporting options. In this step, add any additional call types that you may require for your configuration (for example, emergency calls). If you do not require any additional call types, skip this step.

The following steps demonstrate how to enter a call type. For this example, enter the call type Emergency for Emergency 911 calls (these are sometimes costed differently).

1. From the **Telephone Configuration** navigation tree, click **Call Type**. The **Call Type Definition** grid appears in the right pane with a list of default definitions.
2. Click a blank line at the bottom of this grid and type **`Emergency`**. This adds this call type to this list.

Figure 22 shows the default call types plus the new one that you just entered:

Figure 22 Call Type Definition



You have now told the TBS that calls from this trunk should be costed according to the template you created.

Define Carrier Pricing Templates

Carrier Pricing Templates help determine the type and cost of a call. The Telephone Configuration Database uses these templates to assign costs to the calls based on the trunks used and the digits dialed. For this example, you define a template for regular long-distance service with multiple pricing definitions.

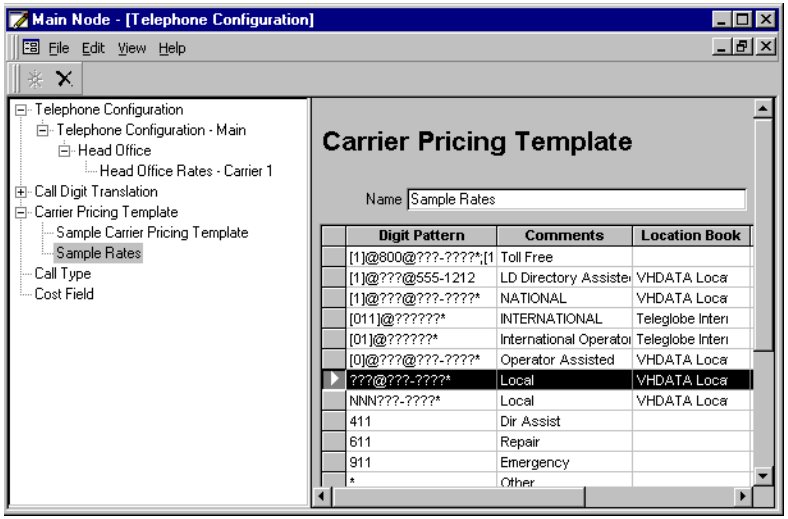
For each digit pattern that represents a billable call, assign either the rate file and table from your telephone company or a flat per-minute or per-call charge. Add the flat per-call charges to the cost assigned by the rate file of your telephone company.

Carrier Pricing Template—Sample Rates

To enter the sample carrier pricing template, perform the following steps.

1. From the Telephone Configuration navigation tree, click **Carrier Pricing Template**, and then click **File > New Carrier Pricing Template**. This displays the Carrier Pricing Template grid in the right pane. See Figure 23.
2. In the **Name** field, enter **`Sample Rates`**.
3. Click **Use Default Template** to create a set of default values for North America. Update these values with your own system requirements.

Figure 23 Carrier Pricing Template



Edit pricing definitions in Carrier Pricing Template

The following steps describe how to edit the pricing definitions for this default table. These pricing definitions allow the TBS to interpret any type of

call containing identifiable digit patterns, and then cost them accordingly. They appear as a line-by-line listing in the grid.

For this example, you edit only the pricing definitions for international and North American long-distance calls to specify the appropriate rate tables for your carrier. These default pricing definitions have already been created to provide you with standard North American dialing patterns. You only need to select the appropriate rate tables for them. The following examples demonstrate the use of the rate tables.

National Calls: These types of calls use the location book VHDATA Location Book.

International Calls: These types of calls use the location book Teleglobe International Location Book.

In certain cases, you may need to add new pricing definitions to match your own configuration and dialing patterns.

Note: The order in which you enter these pricing definitions is important. During costing, calls are compared to the digit pattern of the first definition at the top of the list. The TBS then proceeds down the list until it matches the Digit Pattern field and, if used, the rate table. The TBS then proceeds to the next definition if the rate table cannot cost the call (even if the digit patterns are matched).

When you enter digit patterns for the pricing definitions, you can use certain wild card and format characters as digit placeholders. Use the asterisk * (multiple placeholder) or question mark? (single placeholder) as wildcards for selecting common digit patterns. Use the optional flags { } (curled brackets) to select optional digits to be included in the digits dialed. Use the delete flags [ ] (square brackets) to select any digits that need to be suppressed during rate table lookups but displayed on reports. Use the hide flag. (period) to hide all of the digits that follow it in formatted reports. Refer to the online Help under Pricing Definition for more details on using wild card characters.

You can modify each pricing definition in this Carrier Pricing Template by clicking the record line in the list and typing over the available fields. To view each record in a dialog box, click the record line and click Edit.

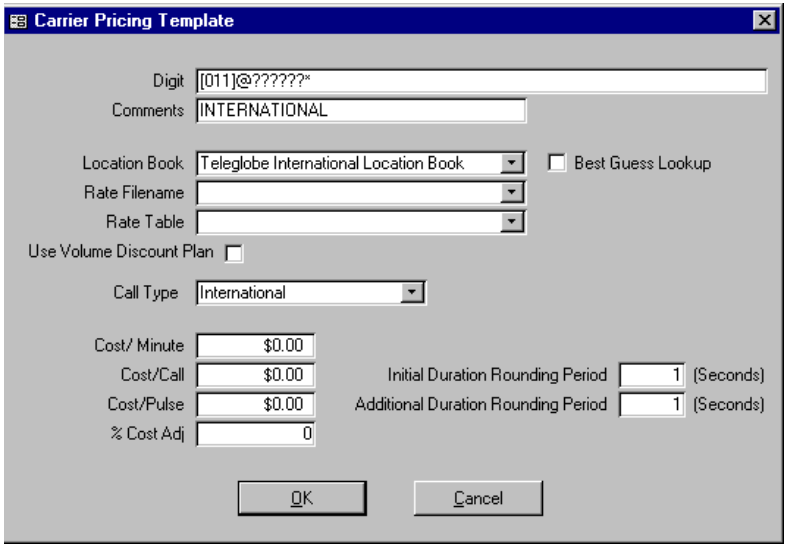
For example, to edit the International pricing definition, click the record line for International (you may need to scroll across the grid to locate International in the Comments box), and then click Edit. In the dialog box that appears, simply enter the desired information for it. Once you have entered the rate information for each type of call, click OK to save it and return to the Carrier Pricing Template grid.

To modify pricing definitions, perform the following steps.

International Calls

1. Click the record line in the **Carrier Pricing Template** grid that contains International in the **Comments** box, and then click **Edit**.
2. Enter the information as listed in the dialog box shown in Figure 24 for International calls, and then click **OK**.

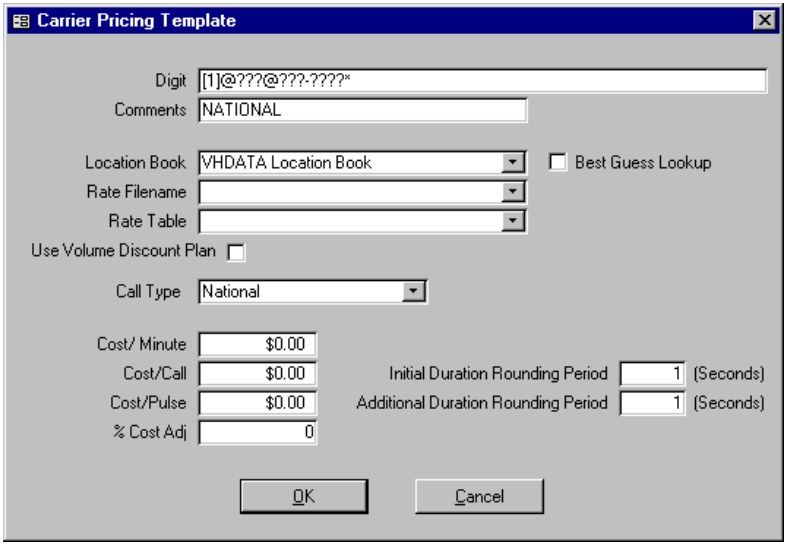
Figure 24 Carrier Pricing Template: International Calls



Long Distance (National) Calls

1. Click the record line in the **Carrier Pricing Template** grid that contains National in the **Comments** box as shown in Figure 25, and then click **Edit**.
2. Enter the information as listed in the following dialog box for national calls, and then click **OK**.

Figure 25 Carrier Pricing Template: Long Distance (National) Calls



Repeat the above steps for other dialed digit patterns where other charges may apply. This completes the entries for this template's pricing definitions.

Define Call Digit Translation

The Call Digit Translation function translates the digits dialed on call records. This translation can be applied to all outgoing calls in the system or to calls on specific trunk groups in the system. This allows the TBS to process and

print a different digit pattern from the one that is actually dialed (for example, suppressing access codes).

Note: Call Digit Translation does not affect Calling Line ID or Automatic Number Identification (CLID/ANI) digit patterns on incoming calls.

For this example, you build a System Call Digit Translation table to remove the access code "9" from the digits dialed of the call records. This way, each call record appears without the access code on reports. The digit is the access code used to access a trunk on the CS 1000 or Meridian 1 system to initiate a call. For example, your system may require that you enter "9" to select a trunk to make an outgoing call. Each call record contains the access code digits, which are entered as part of the digit stream.

To translate the digit patterns for all calls, perform the following steps.

1. Click **Call Digit Translation** from the **Telephone Configuration** navigation tree.
2. Click **File** > **New Digit Translation Table** to add a new definition for this table. This creates another menu option entitled **New Digit Translation Table 1** under this menu option. For this new call digit translation, a blank table appears in the right pane.
3. Rename this table by typing **`Sample CDT`** in the **Name** box.
4. Enter the following information in the first line of this grid:
   - Match Digits: **`9`**
   - Replace Digits: **`-`**
5. Leave the remaining fields and boxes blank.

If you are not sure of what your access codes are:

1. Review the collected call records in the **Collection** tab (Data) of the **System Task** pane.
2. Access the TBS main window, click **Collection** tab of the **System Task** pane, and then click **Data**.

3 Check the Digits field for any of the outgoing call records. If the system inserts an access code in the digit stream, it appears here.

This completes the steps for entering the Call Digit Translation.

Enter Telephone Configuration

The Telephone Configuration Database is the key to pricing calls and tracing them to their destinations. This database defines the type of costing used through each defined service and includes any additional costs defined for your system and location. Each defined service uses predefined location books and rate tables based on your telecommunications carrier's offerings. The TBS uses this configuration information to cost the call records and report on them.

Now that you have all of the elements required to construct your telephone configuration, you must add them to this table. The Telephone Configuration table (in the Telephone Configuration Database editor) is sorted into the following three components:

- General information (includes internal call definitions)
- Node information
- Service definitions (trunks)

You can define multiple nodes for each telephone configuration. As well, you can define multiple service definitions for each node.

The following sections describe how to create each of these components.

Create Telephone Configuration (General Information)

The first part of the Telephone Configuration table contains its general information and optional costing for internal calls.

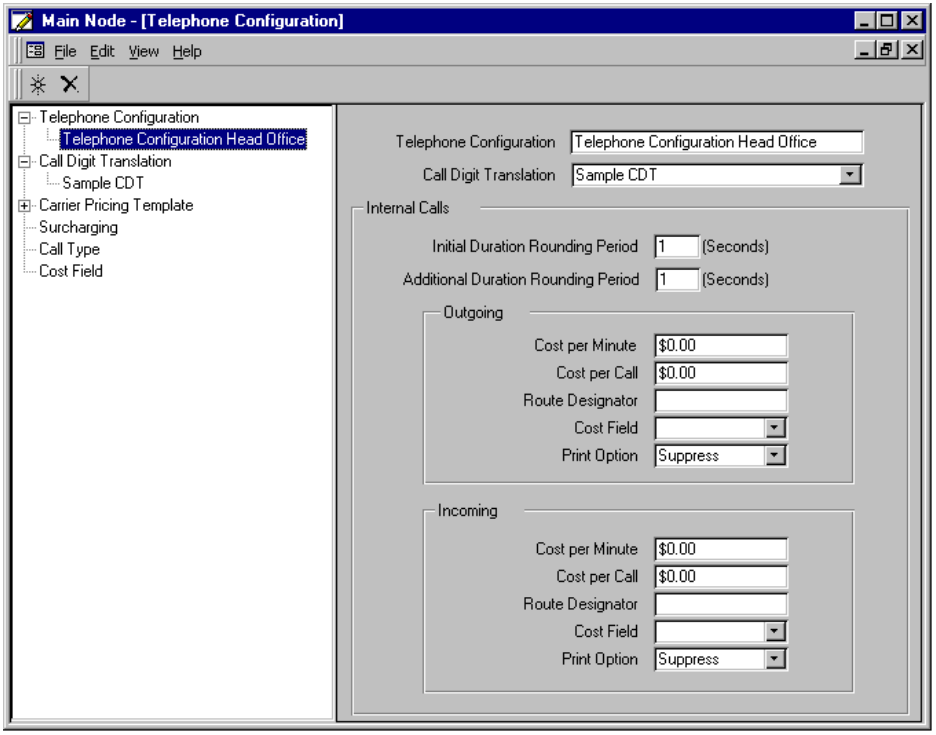
To create a new telephone configuration table and enter its general information, perform the following steps.

1 Click the **Telephone Configuration** menu option, and then click **File > New Configuration**. A data entry form appears as shown in

Figure 26 on page 102 in the right pane allowing you to enter this telephone configuration's general information.

2. Enter a descriptive name for this configuration by typing **`Telephone Configuration Head Office`** in the **Telephone Configuration** box.
3. Specify the Call Digit Translation table that will be used for this Telephone Configuration by selecting Sample CDT from the **Call Digit Translation** drop-down list box. You previously defined this table in the **Call Digit Translation** function.
4. If you want to assign bill party surcharging to this configuration (that is, you want to apply additional surcharges for telephone usage based on extensions, authorization codes, or account codes), then select the surcharge definition from the **Call Party Surcharge Profile** drop-down list box. For this example, leave this field blank. It does not require surcharging.
5. If your system outputs CDR for internal calls (that is, calls made between extensions within the system), then enter these costs in the Internal Calls fields of this table. For this example, leave the default values in these fields.

Figure 26 Telephone Configuration editor



This completes the steps for creating a new Telephone Configuration table and entering its general information.

Add Main Node (Node Information Editor)

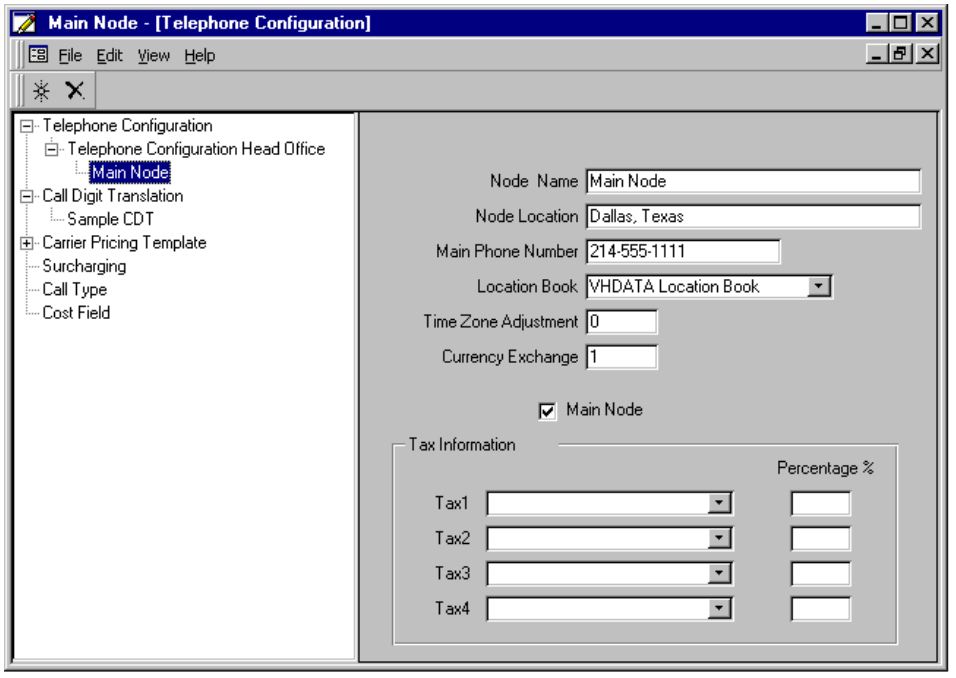
The next step in entering this telephone configuration is to define the general information for the main node. Since a telephone configuration can contain multiple nodes, you must define each node separately. For example, your company's telephone system may span different offices (nodes), which may use multiple tie trunks. For this example, you are creating the minimum required node—the Main Node.

To add a node to this defined configuration**,** click the menu option **Telephone Configuration Head Office** (which you just created in the previous steps), and then click **File > New Node**.

To edit this node, perform the following steps.

1. In the Node Name box as shown in Figure 27 on page 104, enter the name for this node. For example, enter **`Main Node`**. The title in the menu changes to Main Node.
2. In the **Node Location** box, enter the city and province/state for your company. For example, enter **`Dallas, Texas`**.
3. In the **Main Phone Number** box, enter the telephone number for this location. For example, enter **`214-555-1111`**.
4. From the **Location Book** drop-down list box, select **VHDATA Location Book**.
5. Since this is the main node, leave the **Time Zone Adjustment** box at default value:0.
6. Since this is the main node, leave the **Currency Exchange** box at its default value: 1.
7. Leave the **Main Node** check box turned on. Only one node can have this checked.
8. If the rates defined for this node require additional taxes, then select them from the **Tax Information** drop-down lists. You must have defined these taxes in the Taxes editor.

Figure 27 Telephone Configuration - Node editor



This completes the steps for defining the Main Node. The next step is to create the service definitions for this node. That is, you must enter the costing parameters for the different trunk groups in this node.

Adding Long Distance Service Definition to Main Node

Now that you have selected a node, you must enter its pricing definitions. These pricing definitions apply to different trunk groups. For example, trunks 1 to 5 may be used for regular long-distance calling, and trunks 7 and 8 may be used exclusively for toll free calls.

To add a long-distance service definition to the main node**,** click the **Main Node** menu option, and then click **File > New Service/Trunk Group**.

This creates another menu option entitled New Service 1, and displays the tabs in which you can enter the service definition, fixed and variable and

carrier costs, and reporting options. Click the following tabs to enter the information for this service:

Service Definition Tab

In this tab, enter the general information for this service definition. This includes the range of trunks using this service as well as its billing parameters.

To enter service definition, perform the following steps.

1. In the **Name** box, enter **`Main Trunk Group`** over the "New Service 1" text. Notice that the navigator tree menu option changes to reflect what you just typed.
2. Leave the **Termination** option (Public Switch Network) and the **Billing Parameters** fields in their defaults.
3. In the **Trunk Numbers** table, enter the trunk range for this trunk group in your CS 1000 or Meridian 1 system. In the Low Range and High Range fields, enter the trunk range (up to 7 digits) in the format "[R][R]RMMM", where "[R][R]R" represents the trunk route number and "MMM" represents the trunk member number. The digits "RMMM" are required. The leading digits "[R][R]" are optional if they are 0. In this example, the trunk route is 2 and the trunk member numbers are 001 to 046.

   Therefore, for this example, enter the following:

   - Total Number of Equipped Trunks: **1**
   - Line/Description: **CO Trunks**
   - Low Range: **2001**
   - High Range: **2046**

Note on Billing Parameters

For certain types of calls (for example, international calls), you may need to enter a connect time adjustment or a minimum call duration to allow for a

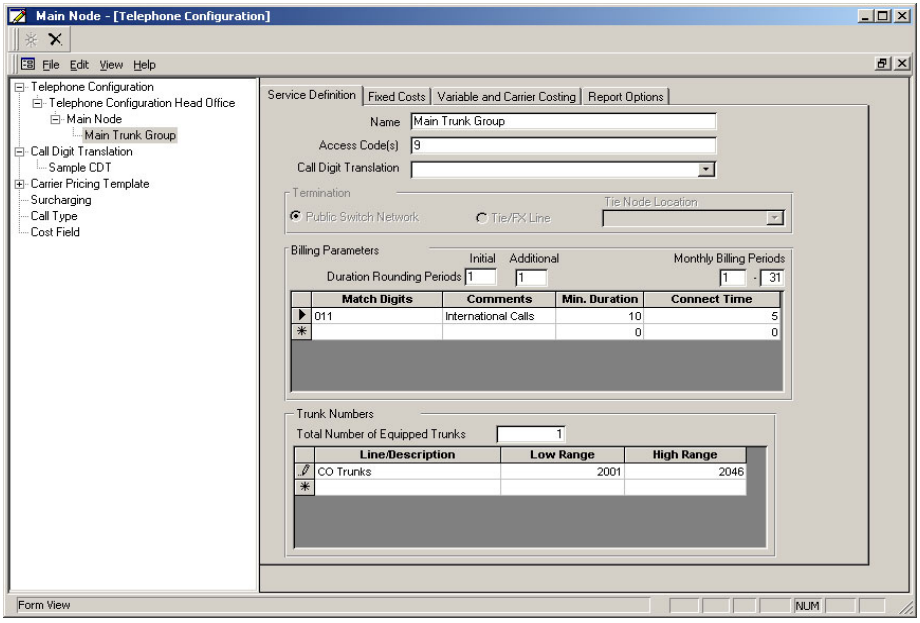
delayed connection. Enter this information in the Billing Parameters table of the Service Definition tab as shown in Figure 28 on page 107.

Click the first record line of the Billing Parameters table, and then perform the following steps to enter a minimum call duration and a connect time adjustment for international calls.

1. In the **Match Digits** box, enter **`011`**. The system interprets all calls starting with the digits 011 (international calls) and applies the minimum call duration and connect time adjustment from the following fields.
2. In the **Comments** box, enter **`International Calls`**.
3. In the **Min. Duration** box, enter **`10`**. This is the minimum call duration in seconds that a call must exceed for it to be costed.
4. In the **Connect Time** box, enter **`5`**. This is the time in seconds that the system allows for a connection. This is subtracted from the call duration before costing.

Note: If these trunks have answer supervision, then you do not need to enter a connect time adjustment value. You can, therefore, ignore these steps.

Figure 28 Telephone Configuration - Service Definition



Fixed Costs Tab

If your system requires fixed costs for these trunk groups, enter them in the Fixed Costs tab. You can enter fixed costs per minute, per call, per meter pulse, or per month. As well, you can define these costs for outgoing or incoming calls.

Variable and Carrier Costing Tab

In this tab, enter the costs that are applied to calls made on this service. You can enter costs for both outgoing and incoming calls. For outgoing calls, you can enter variable costs based solely on the digit patterns, or you can enter the carrier costs that are based on these digit patterns. The carrier costs vary depending on the destinations of the outgoing calls.

For this example, select the predefined Carrier Pricing Template for all calls using this service. The Carrier Pricing Template can then distinguish between different types of calls for its costing.

To select the carrier costing for this service, perform the following steps.

1. In the **Comments** field of **Carrier Costing by Digits**, enter **`Outgoing Calls`**.
2. Leave the **VPN Location Book** drop-down list box blank.
3. From the **Carrier Pricing Template** drop-down list box, select **Sample Rates**.
4. Leave the **% Cost Adjust** field blank.

Report Options Tab

In this tab, enter the call reporting options for this trunk service. This allows you to define how calls that use this service appear on reports. For example, you can suppress all incoming calls.

To enter the call reporting options for all calls using this service, perform the following steps.

1. Click the first record in this grid.
2. From the **Call Type** drop-down list box, select **All Calls**.
3. From the **Cost Field** drop-down list box, select **DDD**. This determines the report grouping and summary field on reports. Cost fields are defined in the Cost Field table.
4. From the **Print Option** drop-down list box, select **Detail**. This indicates that these calls should be displayed in the main report body of the detail reports.
5. In the **Route Description** box, enter **`DDD`**. This is the route used on detail reports for this call.

This completes the defined service for the main node. You have now defined how calls from this trunk should be costed according to the template you created. Click **File > Close** to save this information and return to the TBS main window.

Step 8: Test telephone configuration

Now that you have entered your system's costing model and configuration, you should test the accuracy of the configuration. To do so, you must apply these costs to the collected call records and print some reports to review the generated costs.

Apply costs to call records

The TBS applies the costs based on your Telephone Configuration Database and Rate Tables as a separate step to data collection. That is, once you have collected the call records from the CS 1000 or Meridian 1 system, you must apply costs to them as a separate step.

To apply these costs to the collected call records, perform the following steps.

1. Click **Tools > Costing > Start** from the TBS window.
2. From the **Start Costing** dialog box that appears, select the **Batch Costing Mode** option. This performs a one-time costing of all non-costed call records.
3. In the **Available Telephone Configurations** list, turn on the **Telephone Configuration Head Office** check box. This applies this specific telephone configuration to these call records.
4. Click **Start** to cost the call records. The TBS then starts the costing procedure.
5. Click the **Costing** tab **Status** view of the **System Tasks** pane to check this process. Once it displays the message `The Costing task has completed`, you are ready to generate reports based on the costed call records.

This completes the steps involved in costing the call records.

Reapply Costs to Records

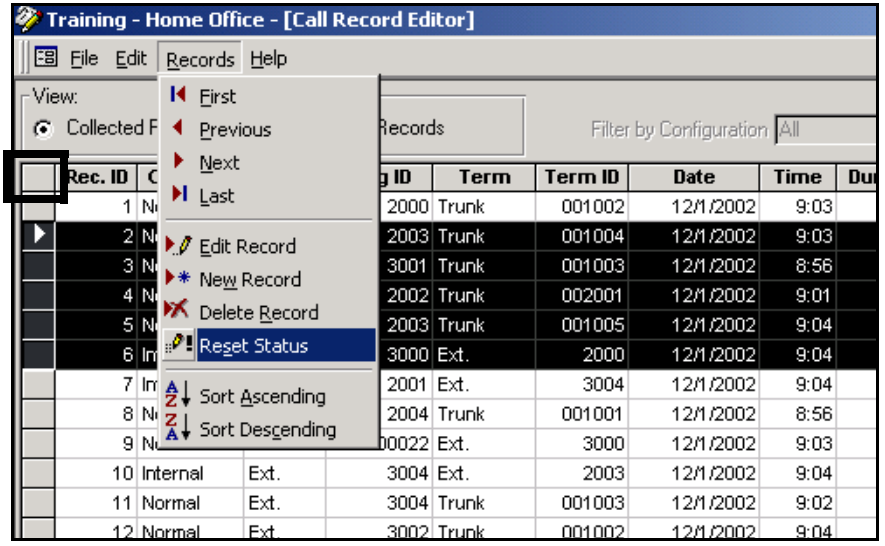
In some cases, it may be necessary to reapply costs to records so that the software can generate valid reports. For example, a value change or

correction in the **Telephone Configuration** database may require new costs. TBS does not cost records that have already been costed once. Therefore, the original costs from the records must be deleted first.

From the Telecom Billing Services main window:

1. Select **Edit >Call Database**. The Call Database appears.
2. In the **Collected Records** view, highlight the records that need to be reset. (Click the gray box at the top of the far left column to choose all records.)
3. Click **Records >Reset Status** as shown in Figure 29.

Figure 29 Reset Status



4. Close the Call Database.

Caution: Use the reset command with care. You are permanently deleting the costs from the chosen records

5 From the TBS main window, click **Tools >Costing > Start** to reapply costs.

6 Observe the online status.

7 When the process is complete, click the **Data** tab and review the information that appears on the screen.

Generate reports

Generate the following reports to test the accuracy of the telephone configuration that you just entered.

Telephone Configuration Report

The Telephone Configuration Report displays your telephone configuration information.

To print the Telephone Configuration Report, perform the following steps.

1. Click **File > Reports** from the TBS main window. The **Reporting** dialog box appears.
2. From the **TBS Reports** menu folder in the **Reporting** menu (left pane), double-click the **Utility Tools** folder.
3. From the list of reports that appears, click **Telephone Configuration**.
4. From the Output Type drop-down list box, select **Printer.**
5. From the Configuration drop-down list box, select **Telephone Configuration Head Office.** This represents the telephone configuration you just defined.
6. Click **Go** to print the report.

Exception Chronological Report

The Exception Chronological Report lists in chronological order all of the calls that were made, and then collected by the TBS. Review this report to verify that the calls were processed and costed accurately. Look for calls that have no location (except toll-free calls). Check that the long-distance calls have costs assigned to them and that local calls do not. Some common errors in the Telephone Configuration Database include incorrect access codes and missing trunks.

To print the Exception Chronological Report, perform the following steps.

1. Click **File > Reports** from the TBS main window. The **Reporting** dialog box appears.
2. From the **TBS Reports** menu folder in the **Reporting** menu (left pane), double-click the Cost Analysis folder.
3. From the list of reports that appears, click **Exception Chronological Report**.
4. From the **Output Type** drop-down list box, select **Printer.**
5. From the **Configuration** drop-down list box, select **Telephone Configuration Head Office**. This represents the telephone configuration you just defined.
6. Click **Go** to print the report.

If either of these reports appears inaccurate, then review your input and make any necessary adjustments to your telephone configuration.

Update databases

For your call records to accurately link to the proper employees and their extensions, as well as to your company's customers and projects, you should update the following databases with the latest employee and customer information:

Employee Database: This database contains a list of employees linked to specific telephones and their associated display names on the system. When a call record is generated, it must be associated with a specific telephone. The Employee Database contains this information, as well as the organizational hierarchy level to which this telephone belongs. If you have installed the OTM Station Administration application, then this is populated from the Station Database. Refer to *Optivity Telephony Manager: System Administration* (553-3001-330) for more information on editing this database.

External Parties Database: This database contains information about individuals or companies with whom you have regular contact.

Roles/Projects Database: This database contains information about the different roles or projects that require reporting in the TBS.

To view these databases and add any additional records to them, click the appropriate name in the Edit drop-down menu of the TBS main window.

This completes the instructions for getting started with the TBS. Refer to the online Help for complete details on all of the commands and functions described in the previous sections.

Maintenance tasks

Once you have initially populated the main databases with your company's information, all that you need to do is to collect data, apply costs to the call records, and generate reports regularly. Since the TBS can perform these activities based on a routine schedule, you should establish your own schedule of activities to allow for regular data collection and reporting. As well, you should routinely maintain and back up your databases to keep them accurate.

The following sections outline the standard procedures that you should incorporate into your regular operational routines. They provide a model for you to follow during the operation of the TBS.

Schedule of activities

Table 2 on page 116 contains a recommended schedule of activities that you should follow while using the TBS. To simplify these activities, use the OTM Scheduler to schedule them to run at regular intervals

Table 2OTM Scheduler

Task	Frequency
Data collection	Daily
Costing of call records	Daily
Report generation	Monthly
Employee Database	Weekly
External Parties Database	Weekly
Roles/Projects Database	Weekly
Telephone Configuration Database	Monthly
Location Books	Quarterly
Rate Tables	Quarterly
Archive Call Database	Monthly
Purge Call Database	Monthly
Restore Call Database	When recovering lost data

Data collection (daily)

The collection of call records from the system (or optional CDR buffer unit) to the PC is a key task of your TBS operations. Without this detailed calling information, the TBS reports do not contain any call record data. Therefore, it is important to regularly collect call records from the system.

Run data collection on a daily basis. If there is a problem with the flow of data from the system, the system warns you of the malfunction within a short time period. This early detection can provide for quick corrective action and minimal data loss.

To collect data for a system, access the TBS for the selected system, and then click **Tools > Collection > Start** from its main window. From the Start Collection dialog box, select either **Batch** or **Real Time mode**, and then click **Start**. Select the **Batch** option to perform a one-time data collection from the

system, or from the buffer unit. Select **Real Time** to continuously collect CDR records from the system or from the buffer unit.

During the data collection process, the TBS collects data from the system (or optional buffer unit), and builds that data into the Call Database. Based on the size of the buffer unit, communications usually take place nightly. Less frequent data collection is possible, provided the buffer unit does not reach capacity.

Note: If the buffer does reach capacity and data collection has not been initiated, the system may lose valuable call records. Remember to collect data regularly.

The status of each data collection procedure is tracked in the Collection tab of the System Tasks pane. As well, all activity completed by the TBS is recorded in the OTM Event Log Viewer for diagnostics and troubleshooting. You can access the Event Log Viewer from the OTM Navigator. Review this information while collecting data to ensure that the system is collecting properly.

Once you have collected CDR data from the system, you are ready to apply costs to them and generate reports based on this information.

Data collection troubleshooting

During data collection, the TBS displays the call records it has collected. If this number fails to increment or remains at zero, then either there is no data to collect or the TBS has not been able to communicate with the system. In this case, take the following actions:

- Click the **Collection** tab from the **System Tasks** pane (main pane in the TBS window), and then click Status to review the task's status.
- Check the **System Alarms** pane (bottom right pane in the TBS window) to review any relevant information.
- If communicating through a modem, ensure that the modem's AA (auto-answer) light is on.

- Make sure that the communications port that you specified in the System Configuration **Collection** tab is the same as the connection on the back of your PC (the port on which you connected your cable).

The following is a list of common data collection problems:

- Data files are in use by another network workstation, or the Call Database editor is opened.
- The communications parameters are not set up properly for the system.
- The data collection parameters are not set up properly.
- The PC has insufficient disk space for the Call Database.

Costing of call records (daily)

The TBS applies the costs based on your Telephone Configuration Database and Rate Tables as a separate step to data collection. That is, once you have collected the call records from the CS 1000 or Meridian 1 system, you must then apply costs to them based on the telephone configuration. As with the Data Collection procedure, you should run the costing procedure on a daily basis. This way, you can quickly identify any problems in the costing model or telephone configuration.

To cost call records for a system, perform the following steps.

1. Access the TBS for the selected system, and then click **Tools > Costing > Start** from its main window.
2. From the Start Costing dialog box, choose either Batch or Real Time mode, and then click **Start.**
   - Select **Batch** to perform a one-time costing of all non-costed call records.
   - Select **Real Time** to continuously cost all non-costed call records.

During this process, the TBS creates a costed Call Database containing the calculated costs. The status of each costing procedure is tracked in the Costing tab of the System Tasks pane. As well, all activity completed by the TBS is recorded in the Event Log Viewer for diagnostics and troubleshooting. Review this information while costing the call records to ensure that the system is costing properly.

Once you have costed the call records, you are ready to generate reports based on this information.

Report generation (monthly)

The TBS reports provide information on the details of the call records that were collected from the CS 1000 or Meridian 1 system. They also include information on your system databases and configurations. Once you have collected the call records from the system, you should then generate your detail and summary reports to display their information.

To access the Reporting function, click **File > Reports** from the TBS main window. Perform the following steps to generate a report.

Step 1: Select report

Select the report you want to generate from the Report menu in the Reporting dialog box. For example, to select the Extension Detail Report, click T**BS Reports > Cost Analysis > Extension Detail Report** from the **Reporting** navigation tree.

Step 2: Select output device

The TBS can send reports to a selected output device, such as a configured printer, the PC's screen, to a file, or to an e-mail address. Select the output device from the **Output Type** drop-down list box in the **Reporting** dialog box.

Step 3: Select report filters

Before you generate your reports, you should select the parameters (filters) that determine the data ranges on which the reports are run. This includes only the desired range of data.

To enter your reporting filters, access the Reporting dialog box and click the ellipsis command (...) next to the Filters field. In the Filters dialog box that appears, click **Add**. The Filter editor dialog box appears allowing you to enter the report's filters. Once you have defined this filter's parameters, enter a unique name for it in the Filter Name box. When you exit from this function and return to the Reporting dialog box, you can simply select this predefined filter from the Filter drop-down list box.

Step 4: Generate report

Once you have selected your parameters, click **Go** to generate your report.

If you want to schedule a report to run at a specific date and time, click **Schedule**. This invokes the OTM Scheduler. Use the Scheduler to enter the date and time that you want to run the report. It then generates it at the selected date and time.

Database updates

The TBS contains a set of functions to assist you in managing your system's databases. Proper management of data ensures that your reports contain timely and accurate information. If the TBS databases contain outdated information (for example, the Employee Database contains employees who are no longer with the company), then the reports are inaccurate. You should, therefore, regularly update your databases.

As well, it is important to make backup copies of the main TBS database files for recovery purposes. This way, if your PC loses data (for example, in case of hardware or disk failure), you can recover the lost data.

Note: You must decide on the frequency of the backup and archive procedures. Base this frequency on the size of your data records and your system capacity. As a rule, you should back up your data once a month.

The following is a list of the databases that you should update on a regular basis:

Employee Database (weekly)

The Employee Database controls the distribution of costs to the different cost centers within your company. It is extremely important to have each extension's charges allocated to the appropriate organizational level. Update this directory as often as necessary depending on the frequency of changes made to the employee records. As a rule, you should update it weekly.

To avoid any problems, follow these steps during your Employee Database updates.

1. Print the Employee Directory Report.
2. Access the Reporting dialog box by clicking **File > Reports** from the TBS main window.
3. From the Reporting dialog box, click **TBS Reports > Directory Information > Employee Directory**.
4. Select **Printer** as the Output Type, and then click **Go** to print this report.
5. On the hard copy printout of this report, enter the changes that have occurred over the past week (for example, New department, Staff moving to another department, New extensions, and so on).

6 Enter the new changes into this database using the Employee editor. Access the Employee editor by clicking **Edit > Employees** from the TBS main window.

7 Print the Employee Database Report again and verify your changes. Save this hard copy printout to track changes over a long time frame without having to repeatedly access the system.

External Parties and Roles/Projects Databases (weekly)

Similar to the Employee Database, these databases contain valuable information that is used to generate accurate reports. To avoid errors or out-of-date records, print the External Parties and the Roles/Projects reports, and then check them. Remember to update these databases on a weekly basis.

Telephone Configuration Database (monthly)

The Telephone Configuration Database contains the information needed to cost your telephone carrier's services. Periodically, you may be required to enter changes to ensure the accuracy of your rates. These changes may involve edits to the rate tables, carrier pricing templates, or to the trunk tables.

To avoid any problems, follow these steps during your Telephone Configuration Database updates.

1 Print the Telephone Configuration Report.

2 From the Reporting dialog box, click **TBS Reports > Utility Tools > Telephone Configuration**.

3 Select **Printer** as the Output Type, and then click **Go** to print this report.

4 Check that the information on this report is complete.

5 Review the information for accuracy with the appropriate personnel.

6 Make the appropriate changes to the Telephone Configuration Database. Access this database by clicking **Edit > Telephone Configuration** from the TBS main window.

Location Books (quarterly)

Location books serve two purposes in calculating costs for the TBS. Their first and primary purpose is to find a meaningful location name for the source and destination of a phone call. The second purpose is to obtain additional rating information, which is used to determine the cost of a call. That is, it identifies the physical or virtual locations of calls so that the TBS can apply the appropriate usage costs to them based on their distance or codes.

Periodically, location designations change (for example, new area codes are added to the North American V&H grid). You must, therefore, remember to update your defined location books on a regular basis. You can obtain the latest location books from your dealer.

Rate Tables (quarterly)

The Rate Tables provide the TBS with the required rates and coverage areas used to identify how the calls to different locations are costed. This way, the TBS knows which calls are costed with which rates.

Similar to the Location Books, Rate Tables must be updated on a regular basis due to changes in tariffs. You must, therefore, update your rate tables on a regular basis. You can obtain the latest rate tables from your dealer as they are updated.

Call Database maintenance (monthly)

The Call Database contains all of the call records (CDR) that you have collected from your CS 1000 or Meridian 1 system and optionally costed using the Telephone Configuration Database. As the TBS collects call records from the system, the Call Database file continues to grow in size and take up more space on your PC's disk drive. Therefore periodically remove any old or unwanted call records from the Call Database to make room for the new call records. This prevents the Call Database from taking up too much disk space on your PC. Remove old data from the Call Database on a monthly basis. Based on the size of your Call Database, you may need to remove old data from it more frequently.

You can remove old call records from the Call Database by either copying (or archiving) them to an external source, or by simply deleting them. The following sections briefly describe the functions used to archive, delete (purge), and restore these call records.

Archive Call Database

The Archive function is used to copy—or archive—a range of call records from the Call Database to an external device, such as a network drive or a disk. Use the Archive function's Purge option to delete this same range of call records from the current Site/System directory on your PC after the archive has completed. This frees more disk space on your PC for new call records. You can archive an entire Call Database, or you can archive a range of call records within a Call Database based on their call dates. This way, you can archive any old call records that you no longer require. If you ever need this data again, you can copy it back to your source Call Database by using the Restore function.

To access the Archive function.

1. Select **File > Call Database > Archive** from the TBS main window.
2. Enter your archive information, and then click **Go** to proceed with the archive.

Purge Call Database

The Purge function is used to delete—or purge—a range of call records from the Call Database. This frees more disk space on your PC for new call records and improves overall system performance. You can purge an entire Call Database, or you can purge a range of call records within a Call Database based on their call dates. This way, you can remove any old call records that you no longer require.

To access the Purge function

1. Select **File > Call Database > Purge** from the TBS main window.
2. Enter your purge information, and then click **Go** to start purging the range of call records.

3 The Archive/Restore/Purge status dialog box appears with the message `Purge is an irreversible action. Are you sure you want to purge the records?`. Click **Yes** to proceed.

Restore Call Database

The Restore function is used to copy—or restore—the archived call records from an external device such as a network drive back to the Call Database.

To access the Restore function.

1 Select **File > Call Database > Restore** from the TBS main window. The Restore dialog box appears.

2 Enter your restore information, and then click **Go** to proceed with the restore operation.

Summary of tasks

The following is a summary of the major tasks described in the previous sections as they are run by time period:

Daily tasks

- Collect CDR data from your buffer unit (Nortel recommends that you use a buffer unit to store CDR data). Collections can be scheduled to occur automatically every day, or they can be manually invoked each day. If you are not using a buffer unit, a dedicated PC COM port continuously collects the CDR data as they are output from the system.
- Review the data collection Status pane daily to ensure that your scheduled collection was successful. As the TBS collects call records, it displays them in the data collection Data tab.

Ongoing tasks (recommended weekly)

- If you are not using the Station Administration application, you must perform your Employee Database updates manually.
- Update External Parties and Roles/Projects Databases. These databases assign the names of external parties or roles and projects to the digits dialed. The reports can then include both the dialed number and these names. If you use these databases, they should be updated periodically.
- Perform database backups. It is important to maintain backup files of your databases on external devices or media for security purposes.

Monthly tasks

- Run your monthly reports. Select your reporting filters to ensure that you are reporting on the correct subset of the collected data. Typically, this includes setting the date for your reporting period.
- Archive or purge your Call Database data. Remove any old or unwanted call records from the Call Database to make room for the new call records. Based on the size of your Call Database, you may need to remove old data from it more frequently than once a month.

Quarterly tasks

- Update your system's Location Books. Periodically, location designations change (for example, new area codes are added to the North American V&H grid). You must, therefore, remember to update your defined location books on a regular basis.
- Similar to the Location Books, Rate Tables must be updated on a regular basis due to changes in tariffs.

System setup for hospitality billing

In addition to its standard general business functions (that is, those required by most organizations to collect, cost, and report on calls), the TBS also includes functions and reports to allow for hospitality and campus billing. The Bill Party Surcharge function applies charges to calls in addition to the trunk-based usage charges. This allows for additional telephone usage charges to be assigned to users based on such criteria as their extensions, authorization codes, and account codes. The filterable data transmission function can post this usage data to an existing Property Management System.

This section explains how to set up the TBS to process call records for hospitality billing. Specifically, it describes how to set up the system databases to assign surcharges to guests at a hotel and transmit this data to a Property Management System.

This section also describes how to perform the other functions required to set up and run the TBS. These include data collection, trunk-based costing, and report generation. These additional functions are included here to help you understand how the hospitality-related functions relate to the other TBS's general business functions.

Example scenario

The instructions in this section are based on the following scenario:

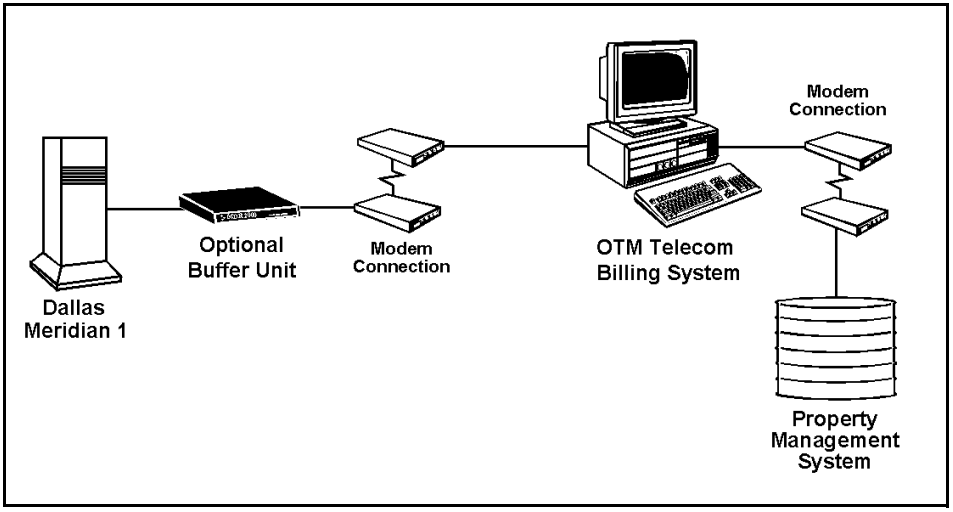
- A hotel chain, Rooms International, has a property located in Dallas, entitled Downtown Property. The telephone number for this hotel is (214) 555-1111. The telephone system requires that all users and guests enter the access code 9 before making any outgoing calls.
- There are five trunks on the Meridian 1. These are configured as trunk 1 to 5.
- The Meridian 1 located in the switch room of this property requires an MDR-2000 ISD to collect CDR data. A modem is attached to it to allow for communications between it and a PC in another room. It has a dedicated extension number of 222.

- The PC on which the TBS is installed is located in another room of the same building. A modem is attached to this PC's COM1 port and is used to connect to the MDR-2000 ISD. The TBS collects the CDR data from the MDR-2000 in real-time mode.
- The TBS must also post all calling activity for its rooms (Guest Rooms and Suites with extensions 100 to 999) to its Property Management System.

System schematic

Figure 30 on page 128 outlines the relationship between the TBS and its hardware components:

Figure 30 System block diagram



Summary: Setting up the TBS

The following is a summary of the steps required to set up and configure the TBS to process call records.

1. Ensure that the CS 1000 or Meridian 1 system is set up to properly output CDR data.
2. Install and set up the MDR-2000 ISD.
3. Install any rate tables that were purchased for your dialing plan.
4. Run the TBS so it can be configured.
5. Set up and test the data collection process before running it in a real-time situation:
   a. Enter the data collection parameters.
   b. Test data collection.
6. Obtain the List Trunk and Member (LTM) values from the system.
7. Set up the Organizational Hierarchy and Employee Databases to include the extensions for the guest rooms and suites, as well as for the hotel's staff.
8. Set up Telephone Configuration Database:
   a. Access the Telephone Configuration Database editor.
   b. Update the Call Type Definitions table.
   c. Define carrier pricing templates.
   d. Define the call digit translation.
   e. Define the bill party surcharges.
   f. Enter the telephone configuration.
9. Test the telephone configuration.
10. Set up data transmission to post call records to the Property Management System in real time.

11 Start data collection and transmission.

Step 1: Ensure that the system is set up properly

For the TBS to collect and process CDR data, the CS 1000 or Meridian 1 system must output the data in the proper format. You must, therefore, enable the required features and options in the system overlays. This section describes the options that are required for the TBS to process the CDR data.

Note: This document is not intended to describe all options related to CDR data. For complete details on the available CDR options and information on configuring CDR, refer to the appropriate documentation (for example, *Call Detail Recording Description and Formats*).

Select CDR output format

In LD 17, select either NEW or OLD format CDR output (FCDR=NEW). The TBS contains script files for supported buffer units, including the MDR-2000 ISD. As well, it can be configured to support both NEW and OLD CDR formats.

Auxiliary Identification output in CDR record

In LD 15, configure the Auxiliary Identification to be output in CDR (AXID=Yes). The AXID field is not captured by the TBS, but is required to ensure that data fields output in the CDR record appear in the expected positions.

Configure routes for CDR output

In LD 16, configure the routes that output CDR data (CDR=Yes), and determine the type of CDR data to output. For example, you may want to record all incoming calls and only outgoing toll calls.

Ensure that the SDI port for your system is configured to match the settings on the buffer unit. If you plan to collect data at a higher baud rate, you may need to change both the SDI port and the buffer unit settings.

The default settings for the MDR-2000 ISD are:

- Baud = 1200
- Data Bits = 8
- Parity = None
- Stop Bits = 1

If you plan to use the default values for the MDR-2000 ISD, you must use the same values for the SDI port.

Step 2: Install and set up buffer unit

The TBS collects CDR data from the CS 1000 or Meridian 1 system either directly or through one of several types of buffer units. Based on your configuration, you may need to collect the CDR data from a buffer unit in a specific format and share it between different applications.

For this setup, assume that the TBS is collecting CDR data from the MDR-2000 ISD. This section describes how to connect the MDR-2000 ISD to the system and the PC via a modem connection. This provides you with an example by which you can learn how to set up the other OTM-supported buffer units. Since other buffer units have different connection and communications requirements, you should refer to their documentation for more details on setting them up.

Connect MDR-2000 ISD to the system and PC

The first step is to connect and install the MDR-2000 ISD onto the CS 1000 or Meridian 1 system. It can then collect and store call records as they are output from the system. You must then connect the PC to the MDR-2000 ISD so the TBS can collect the call records from its database files. For this example, you configure and connect modems to the MDR-2000 ISD and to the PC.

For a complete description of how to connect the MDR-2000 ISD to the system and the PC, refer to “Getting started” (page 67).

Verify that the MDR-2000 ISD is collecting data

Access the MDR-2000 ISD to view and verify that the incoming data stream is valid.

To access the MDR-2000 ISD, perform the following steps.

1. Run a terminal program such as Windows HyperTerminal.
2. Dial up the telephone number of the MDR-2000 ISD. This is the number where the MDR-2000 ISD was connected via its modem. If the PC is connected directly to the MDR-2000 ISD, then you can simply start typing the commands to edit the parameters. For this example, enter **222**.
3. Type **<Ctrl-V> I D <Enter>**. This verifies that you are communicating with the MDR-2000 ISD. The response is the serial number of the MDR-2000 ISD.
4. To view the data, type **<Ctrl-V> D U <Enter>** (you may need to type this twice). If the data appears incorrect (for example, it contains random characters), then there is probably a communications problem.

Step 3: Install rate tables and location books

Before you configure the TBS, you must install the rate tables that reflect your telecommunications provider's rates. These provide such rates as long-distance charges for direct dialed calls to North America as well as international long-distance charges. The TBS requires these rate tables to accurately apply costs to your long-distance calls.

As well as rate tables, you must install a set of location books for your software. Location books contain codes for the actual locations that are used by the rate tables to determine the charges incurred when calling these locations.

You can obtain rate tables from a rate service or from your dealer. Remember that the rate table files must be compatible with the TBS software. If in doubt, check with your supplier before purchasing any rate tables.

Install the rate tables and location books using the instructions included with them. Remember to install the rate table files onto your OTM TBS directory so you can select the appropriate rate table files when you are defining your carrier pricing templates.

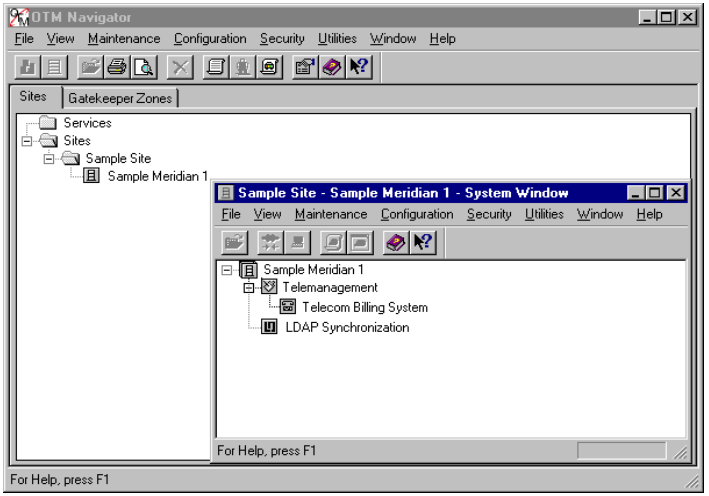
Step 4: Run TBS so it can be configured

If OTM is not already running, click OTM Navigator from the StartUp program group.

In the **OTM Navigator,** open a predefined site and system (for example, Site=Acme Company, System=Head Office).

Once you open the site and system, the following window shown in Figure 31 appears:

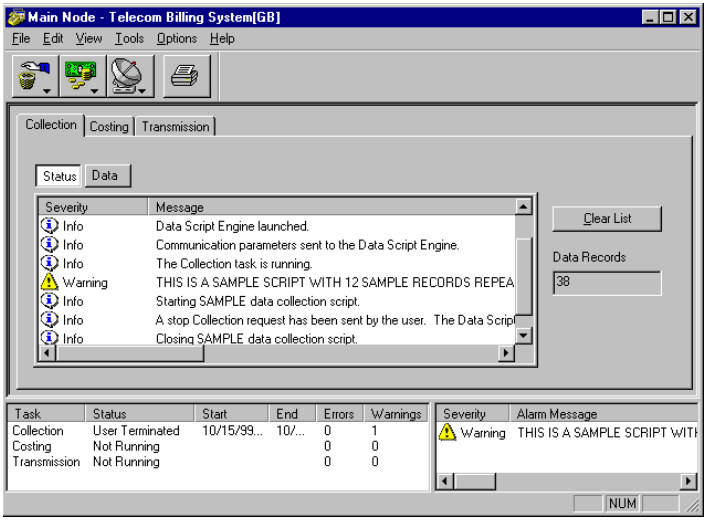
Figure 31 OTM Navigator



From the selected site and system in the OTM Navigator, click **Telemanagement**, and then click **TBS**.

This accesses the TBS application main window, as shown in Figure 32, from which you can set up the communications parameters, telephone configuration, and rate tables for initial use. You must also test the data collection and run reports to see if the data was collected and costed properly.

Figure 32 TBS main window


Main Node - Telecom Billing System[GB]
File Edit View Tools Options Help
Collection Costing Transmission
Status Data
Severity Message
Info Data Script Engine launched.
Info Communication parameters sent to the Data Script Engine.
Info The Collection task is running.
Warning THIS IS A SAMPLE SCRIPT WITH 12 SAMPLE RECORDS REPEA
Info Starting SAMPLE data collection script.
Info A stop Collection request has been sent by the user. The Data Scrip
Info Closing SAMPLE data collection script.
Clear List
Data Records
38
Task Status Start End Errors Warnings
Collection User Terminated 10/15/99... 10/... 0 1
Costing Not Running 0 0
Transmission Not Running 0 0
Severity Alarm Message
Warning THIS IS A SAMPLE SCRIPT WIT
NUM

Step 5: Set up and test data collection

Before you enter your telephone configuration, verify that the TBS is collecting data from the CS 1000 or Meridian 1 system in the correct format. This way, you can test the configuration against actual calls. To test the data collection, simply enter the data collection parameters, collect the call records from the system, and view them in the Call Database.

Enter data collection parameters

For the TBS to collect data from the CS 1000 or Meridian 1 system, you must enter the data collection parameters for the site and system. You should have already connected and configured your hardware (see previous sections

entitled “Step 1: Ensure that the system is set up properly” and “Step 2: Install and set up buffer unit”). You only need to access the System Configuration function’s Communications tab to select the communications and data collection parameters.

To enter the data collection parameters for the TBS, perform the following steps.

1. From the TBS main window, click **Options > System Configuration**. The **System Configuration** dialog box as appears.
2. Click **Collection** tab, and then enter your communications and collection parameters. For example, enter the following values:
   - Type: **`Dial-Up`**
   - Phone No: **`222`**
   - Redials: **`3`**
   - Port: **`COM1`**
   - Baud Rate: **`9600`**
   - Data Bits: **`8`**
   - Parity: **`None`**
   - Stop Bits: **`1`**
3. In the **Collection Script** box, enter then name of the script file that is used for this data collection. This file contains the instructions used to communicate with the buffer unit and collect data from it. The script filename you select depends on the type of buffer unit and the format of the data being collected. For example, if you are collecting data from the MDR-2000 ISD, then select MDR2000.COL. Refer to the “Common Services” chapter of *Optivity Telephony Manager: System Administration* (553-3001-330) for a list of supported buffer units and their corresponding script filenames.
4. Click **OK** to select these options and return to the TBS main window.

Test data collection

Now that you have configured your hardware and entered the required communications parameters, you are ready to test the data collection. At this stage run a data collection only as a test. Later, you can set up and invoke data collection once you have entered all of your system information and you are ready to run it live.

The following is an example to demonstrate how to test the data collection process. This example assumes the following:

- The CS 1000 or Meridian 1 system is outputting CDR data to the SDI port.
- The MDR-2000 ISD is directly connected to theCS 1000 or Meridian 1 system and is continuously collecting and storing the raw CDR data (call records) as they are output from the Meridian 1.
- The TBS collects this CDR data from the MDR-2000 ISD and stores it in the Call Database.

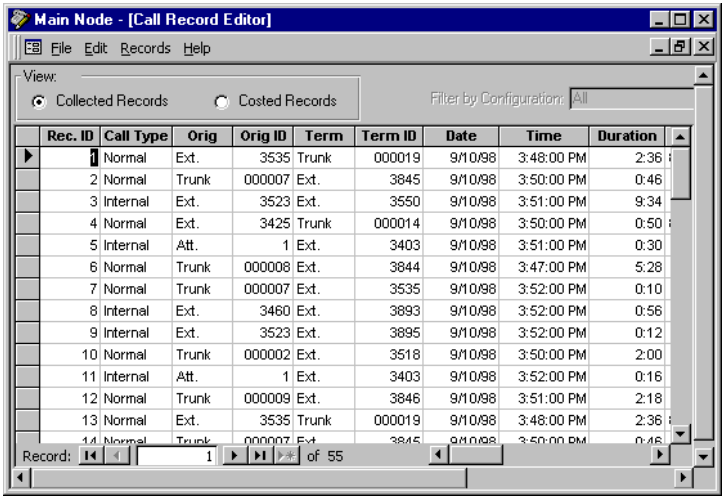
To test the data collection for this scenario, perform the following steps.

1. Wait for some calls to be recorded by the CS 1000 or Meridian 1 system. Either wait for some calling activity on the Meridian 1 or make a few telephone calls. If the MDR-2000 ISD is properly connected to the system, it collects and stores these call records as they are recorded by the Meridian 1 (note that the BMT light is out).
2. Start the data collection process by clicking **Tools** > **Collection** > **Start** from the **TBS** main window.
3. From the **Start Collection** dialog box, select the **Batch** option, and then click **Start**. The TBS starts collecting the call records from the MDR-2000 ISD and places them in the Call Database as shown in Figure 33 on page 137.
4. During the data collection process, the TBS displays both the collection activities as well as the call records as they are collected. To view this information, click the **Collection** tab in the System Tasks pane. Click **Status** to view the status of the collection. Click

Data from this tab to view the call records and verify that they are in the correct format.

5 Review the call records for any invalid fields. For example, check the trunk numbers and digits dialed for invalid values. The trunk numbers appear in the **Orig ID** or **Term ID** fields depending on the "Orig" or "Term" values. Check the first digits in the **Digits Dialed** fields to confirm the access codes. As well, check the call records' dates and times to ensure that they match the date and time on the CS 1000 or Meridian 1 system.

Figure 33 Call Database


Main Node - [Call Record Editor]
File Edit Records Help
View:
Collected Records
Costed Records
Filter by Configuration: All
Rec. ID | Call Type | Orig | Orig ID | Term | Term ID | Date | Time | Duration
1 Normal Ext. 3535 Trunk 000019 9/10/98 3:48:00 PM 2:36
2 Normal Trunk 000007 Ext. 3845 9/10/98 3:50:00 PM 0:46
3 Internal Ext. 3523 Ext. 3550 9/10/98 3:51:00 PM 9:34
4 Normal Ext. 3425 Trunk 000014 9/10/98 3:50:00 PM 0:50
5 Internal Att. 1 Ext. 3403 9/10/98 3:51:00 PM 0:30
6 Normal Trunk 000008 Ext. 3844 9/10/98 3:47:00 PM 5:28
7 Normal Trunk 000007 Ext. 3535 9/10/98 3:52:00 PM 0:10
8 Internal Ext. 3460 Ext. 3893 9/10/98 3:52:00 PM 0:56
9 Internal Ext. 3523 Ext. 3895 9/10/98 3:52:00 PM 0:12
10 Normal Trunk 000002 Ext. 3518 9/10/98 3:50:00 PM 2:00
11 Internal Att. 1 Ext. 3403 9/10/98 3:52:00 PM 0:16
12 Normal Trunk 000009 Ext. 3846 9/10/98 3:51:00 PM 2:18
13 Normal Ext. 3535 Trunk 000019 9/10/98 3:48:00 PM 2:36
Record: 1 of 55

6 If the data appears invalid, then repeat the previous steps, checking to ensure that your hardware is connected properly and that you have the correct settings. Check the parameters on your CS 1000 or Meridian 1 system and the MDR-2000 ISD.

This completes the steps required to initiate a data collection and verify the call records.

Step 6: Obtain LTM from the system

Before you start entering the telephone configuration, you must first obtain the List Trunk and Member (LTM) report from the CS 1000 or Meridian 1 system. This provides you with invaluable information on how to set up your configuration.

Note: If you have ISA, the LTM does not show any members for the service routes. You should print the Route Data Block (RDB) to determine the service routes associated with the ISA routes. All members indicated in the ISA route must be added to the associated service routes.

To obtain the LTM and RDB information for your configuration, access the system, and then print the associated LTM and RDB reports.

Step 7: Set Up Organizational Hierarchy and Employee Databases

The next step is to set up your Organizational Hierarchy and Employee Databases to include the extensions for the guest rooms and suites, as well as for your hotel staff.

Set up Organizational Hierarchy Database

The Organizational Hierarchy Database stores the information for the different levels within your hotel. It provides you with a flexible means of structuring these levels (for example, properties, towers, guest rooms, suites, and so on).

The following example demonstrates how to add the hotel's property in Dallas (Downtown Property) as an organizational level to the Organizational Hierarchy Database. It also demonstrates how to add "Guest Rooms" and "Suites" as sublevels to the Downtown Property level. Once you have defined these levels, you can then enter their corresponding room numbers and details in the Employee Database.

Add Downtown Property to Rooms International

To add the level Downtown Property to the Rooms International System, perform the following steps.

1. Access the Organizational Hierarchy Database editor by clicking **Edit > Organizational Hierarchy** from the TBS main window. The O**rganizational Hierarchy Editor** dialog box appears with a set of default levels.
2. Click **Organizations** tab. The Organizations navigation tree appears with the following top-level default value: ORG.
3. Change this default title by right-clicking the **ORG** node. From the pop-up window that appears, click **Rename** and type **`Rooms International`**.
4. Add a new division to this node by right-clicking the newly named Rooms International node. From the pop-up menu that appears, click **Add New Division**.
5. A new node appears with the default value New Division 1. Type over this name with the desired division title. For this example, type **`Downtown Property`**.

Add Guest Rooms and Suites to Downtown Property

To add the levels Guest Rooms and Suites to the Downtown Property level, perform the following steps.

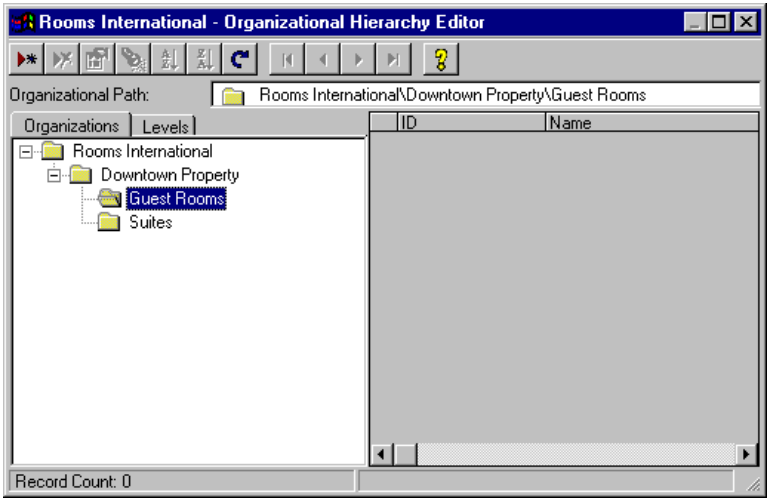
1. Add the level Guest Rooms to the Downtown Property level by right-clicking the newly named Downtown Property node. From the pop-up window that appears, click **Add New Department**.
2. A new node appears with the default value New Department 1. Type over this name with the desired department title. For this example, type **`Guest Rooms`**.

3 Add the level Suites to the Downtown Property level by right-clicking the **Downtown Property** node again. From the pop-up window that appears, click **Add New Department**.

4 Again, a new node appears with the default value New Department 1. Type over this name with the desired department title. For this example, type **`Suites`**.

Figure 34 is an example of the Organizational Hierarchy editor with this input.

Figure 34 Organizational Hierarchy Editor



Enter Guest Rooms and Suites in Employee Database

The Employee Database contains information about the employees in your organization. For hospitality billing, this database can also be used to store information about the rooms within your property (for example, the extensions in these rooms). This information is required to cost and allocate telephone calls to the proper extensions and cost centers within your hotel—for both guests and staff.

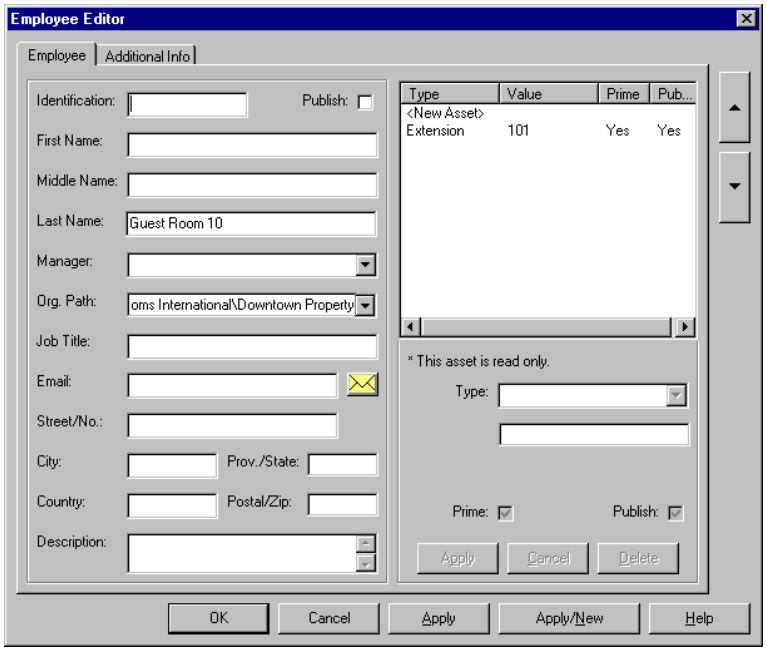
The following steps demonstrate how to enter a sample guest room (Guest Room 10 with extension 101) in the Employee Database. You must repeat these steps for each guest room and suite that has a telephone extension and that requires billing.

1. Click **Edit > Employees** from the TBS main window. The **Employee Editor** dialog box appears.
2. Click the **Add New Record** icon.
3. Enter the following information in the **Employee** tab:
   - Last Name: **`Guest Room 10`**
   - Org. Path: **`Rooms International\Downtown Property\Guest Rooms`**
4. Leave the remaining fields and boxes blank and click **Apply**.
5. Click **<New Asset>** from the Assets field.
6. Click **Extension** from the **Type** drop-down list box.
7. In the blank box, under the **Type** drop-down list box, enter **`101`**.
8. Turn on the **Prime** check box (if you do not turn on this check box, the system marks it as prime as a default).
9. Click **Apply** from the assets field.
10. Click **OK** to save this information and return to the **Employee Editor** dialog box. Note that a new record line appears with this room's identification and name. Click **Close** from this dialog box to save this information and return to the TBS main window.

This completes the steps required to enter this room's information in the Employee Database. Repeat these steps for each guest room and suite in your property. Remember to assign each guest room to the Guest Room level and each suite to the Suite level.

Figure 35 is a sample of the Employee Editor dialog box with this room's information.

Figure 35 Employee Database Employee Editor



Step 8: Set up Telephone Configuration Database

The next step in setting up the TBS is to define the telephone configuration. This identifies how the TBS processes the call records. It involves assigning the appropriate rate tables and carrier pricing templates to your system's trunk groups, entering any call digit translations, and setting any reporting options.

Since defining the telephone configuration is a complex task, it is helpful to demonstrate how to define one using an example configuration. This example

represents a typical configuration and helps you to set up your own configuration.

Note: This telephone configuration is only an example. When setting up your own configuration, you must enter your own company's system and rate information. You should review all of the documentation provided with your CS 1000 or Meridian 1 system and by your service provider. This includes trunk route and member numbers, output format, and rate table names.

Summary of steps

The following summary outlines the steps that you must perform to define the telephone configuration for this example:

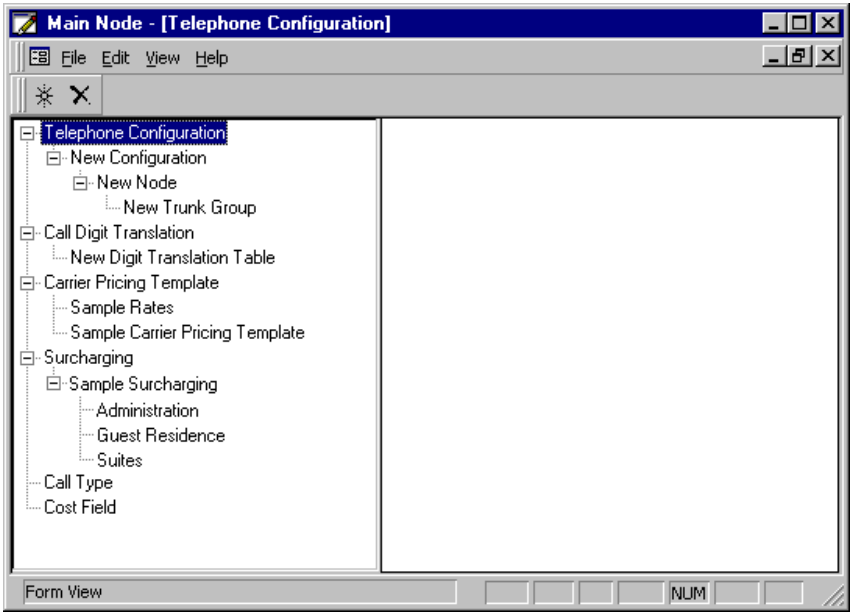
1. Access Telephone Configuration Database editor.
2. Update Call Type Definitions table.
3. Define Carrier Pricing Template.
4. Define Call Digit Translation.
5. Define Surcharges.
6. Enter the Telephone Configuration:
   - a. Create Telephone Configuration.
   - b. Add Main Node to Telephone Configuration.
   - c. Add Long Distance Service Definition to Main Node.

Access Telephone Configuration Database editor

To access the Telephone Configuration Database tables, click **Edit > Telephone Configuration** from the TBS main window.

Figure 36 on page 144 is a sample Telephone Configuration editor. When you access this function for the first time, it appears with blank menu options in the Telephone Configuration navigation tree.

Figure 36 Telephone Configuration editor



Review the LTM report from the CS 1000 or Meridian 1 system to identify the call types for reporting. For example, you can set up the call types: CO, DID, 800, and TIE. With this information, you can set up columns of costing details or cost summaries for these call types.

Update Call Type Definitions

The Call Type Definition function contains a list of the types of calls that may be used by your organization (for example, International, Local, and so on). You select these call types when you define the dialing patterns of your organization in the Carrier Pricing Template. Select these predefined call types when entering your costing and reporting options.

The Call Type Definition function lists a set of default call types that you can select when entering your costing and reporting options. In this step, add any additional call types that you may require for your configuration (for example, emergency calls). If you do not require any additional call types, then skip this step.

Define Carrier Pricing Templates

Carrier Pricing Templates help determine the type and cost of a call. The Telephone Configuration Database uses these templates to assign costs to the calls based on the trunks used and the digits dialed. For this example, you define a template for regular long-distance service with multiple pricing definitions.

For each digit pattern that represents a billable call, assign either the rate file and table from your telephone company or a flat per-minute or per-call charge. Add the flat per-call charges to the cost assigned by the rate file of your telephone company.

Carrier Pricing Template—Sample Rates

To enter the sample carrier pricing template, perform the following steps.

1. From the **Telephone Configuration** navigation tree, click **Carrier Pricing Template**, and then click **File > New Carrier Pricing Template**. This displays the **Carrier Pricing Template** grid in the right pane.
2. In the **Name** box, enter **`Sample Rates`**.
3. Click **Use Default Template** to create a set of default values for North America. Update these values with your own system requirements.

Edit pricing definitions in Carrier Pricing Template

The following steps describe how to edit the pricing definitions for this default table. These pricing definitions allow the TBS to interpret any type of call containing identifiable digit patterns and then cost them accordingly. They appear as a line-by-line listing in the grid.

For this example, you edit only the pricing definitions for international and North American long-distance calls to specify the appropriate rate tables for your carrier. These default pricing definitions have already been created to provide you with standard North American dialing patterns. You only need to

select the appropriate rate tables for them. The following examples demonstrate the use of the rate tables:

National Calls: These types of calls use the location book VHDATA Location Book.

International Calls: These types of calls use the location book Teleglobe International Location Book.

In certain cases, you may need to add new pricing definitions to match your own configuration and dialing patterns.

Note: The order in which you enter these pricing definitions is important. During costing, calls are compared to the digit pattern of the first definition at the top of the list. The TBS then proceeds down the list until it matches the Digit Pattern field and, if used, the rate table. The TBS then proceeds to the next definition if the rate table cannot cost the call (even if the digit patterns are matched).

You can modify each pricing definition in this Carrier Pricing Template by clicking the record line in the list and typing over the available fields. To view each record in a dialog box, click the record line, and then click Edit.

For example, to edit the International pricing definition, click the record line for International (you may need to scroll across the grid to locate International under the Comments field), and then click **Edit**. In the dialog box that appears, simply enter the desired information for it. Once you have entered the rate information for each type of call, click **OK** to save it and return to the Carrier Pricing Template grid.

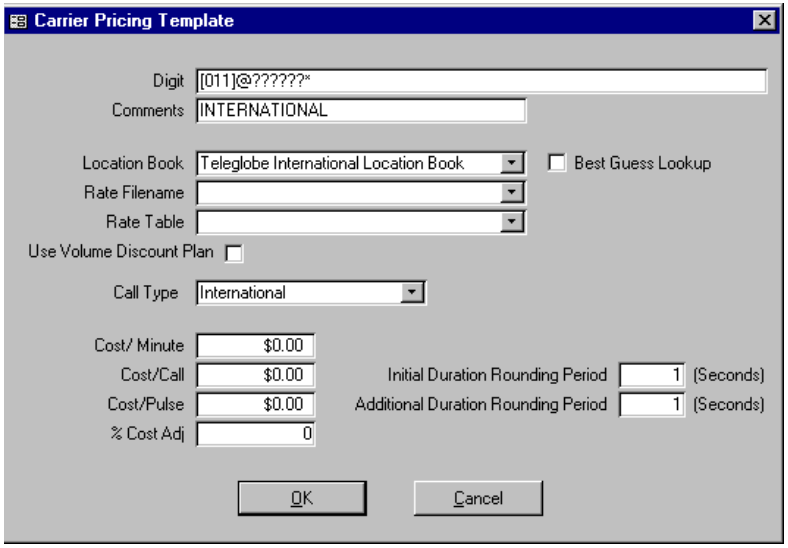
To modify pricing definitions, perform the following steps.

International Calls

1 Click the record line in the **Carrier Pricing Template** grid that contains International in the **Comments** field, and then click **Edit**.

2 Enter the information as listed in the following dialog box shown in Figure 37 on page 147 for International calls, and then click **OK**.

Figure 37 Carrier Pricing Template: International Calls

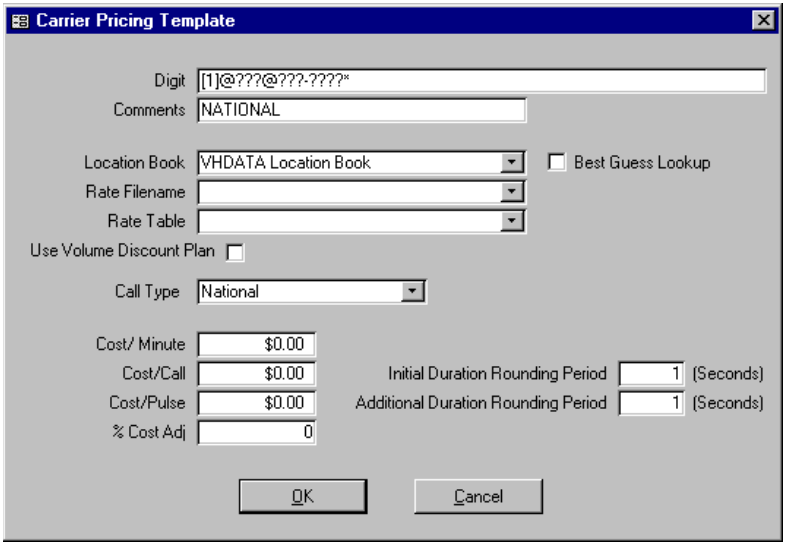


Long Distance (National) Calls

1 Click the record line in the **Carrier Pricing Template** grid that contains National in the Comments field, and then click **Edit**.

2 Enter the information as listed in the following dialog box shown in Figure 38 on page 148for national calls, and then click **OK**.

Figure 38 Carrier Pricing Template: Long Distance (National) Calls



Repeat the above steps for other dialed digit patterns where other charges may apply. This completes the entries for this template's pricing definitions.

Define Call Digit Translation

The Call Digit Translation function translates the digits dialed on call records. This translation can be applied to all outgoing calls in the system or to calls on specific trunk groups in the system. This allows the TBS to process and print a different digit pattern from the one that is actually dialed (for example, suppressing access codes).

Note: Call Digit Translation does not affect Calling Line ID or Automatic Number Identification (CLID/ ANI) digit patterns on incoming calls.

For this example, you build a System Call Digit Translation table to remove the access code "9" from the digits dialed of the call records. This way, each call record appears without the access code on reports. The digit is the access code used to access a trunk on the to modify these pricing definitions CS 1000 or Meridian 1 system to initiate a call. For example, your system may require

that you enter “9” to select a trunk to make an outgoing call. Each call record contains the access code digits, which are entered as part of the digit stream.

To translate the digit patterns for all calls, perform the following steps.

1. Click **Call Digit Translation** from the **Telephone Configuration** navigation tree.
2. Click **File** > **New Digit Translation Table** to add a new definition for this table. This creates another menu option entitled **New Digit Translation Table 1** under this menu option. For this new call digit translation, a blank table appears in the right pane.
3. Rename this table by typing **`Sample CDT`** in the Name box.
4. Enter the following information in the first line of this grid:
   - Match Digits: **`9`**
   - Replace Digits: **`-`**
5. Leave the remaining fields and boxes blank.

   If you are not sure of what your access codes are, review the collected call records in the **Collection** tab (Data) of the System Task pane. Access the TBS main window, click the **Collection** tab of the System Task pane, and then click **Data**. Check the **Digits** field for any of the outgoing call records. If the system inserts an access code in the digit stream, it appears here.

   This completes the steps for entering the Call Digit Translation.

Define surcharges

The Bill Party Surcharge function of the Telephone Configuration Database is used to define any charges that are applied to calls in addition to your trunk-based charges. This function allows for additional telephone usage charges to be assigned to users based on their extensions, authorization codes, or account codes.

The following sections describe how to set up the surcharge profiles for this example configuration. Surcharge profiles define two key pieces of information: they define how to calculate the surcharges and to whom these

surcharges should be applied. Once you have defined these surcharges and assigned them to a surcharge profile, you can select this profile when entering the telephone configuration (see next).

Create surcharge profile and surcharge groups

For this example, you create the surcharge profile entitled Room Group Surcharge. This profile contains the surcharge groups entitled Guest Rooms and Suites. These surcharge groups allow you to apply telephone usage charges to the Guest Rooms and Suites that you defined in the Organizational Hierarchy and Employee Databases.

Surcharge profile

To create the new surcharge profile Room Group Surcharge, perform the following steps.

1. Click **Surcharging** from the **Telephone Configuration** navigation tree.
2. Click **File > New Surcharge Profile** to add a new surcharge profile to this table.
3. In the **Name** box, enter **`Room Group Surcharge`**.
4. Select **Extension** from the first **Identify Bill Party** by drop-down list box.

Surcharge group

To assign the surcharge groups Guest Rooms and Suites to the surcharge profile that you just defined, perform the following steps.

1. Click the name of the Surcharge Profile that you just created (that is, Room Group Surcharge), and then click **File > New Surcharge Group**.
2. In the **Name** box, enter **`Guest Rooms`**.
3. Repeat the above steps and create the Surcharge Group Suites.

Define surcharges for Guest Rooms and Suites

Now that you have created the surcharge profile and its groups, you are ready to apply the surcharges to these rooms. You do so by entering the organizational units Guest Rooms and Suites in the Members tab for each group. You already defined these units in the Organizational Hierarchy Database and assigned the appropriate extensions to them in the Employee Database. You then enter the appropriate surcharges for these members in the Surcharges tab.

Define surcharges for Guest Rooms

To define the surcharges for the surcharge group Guest Rooms, perform the following steps.

1. Click **Guest Rooms** from the Surcharging profile **Room Group Surcharge**.
2. Click **Members** tab, and then click the Organizational Unit drop-down list box. Select **Rooms International/Downtown Property/Guest Rooms**. Since there are no sub-units to this node that require additional surcharges, you can turn off the **Include Sub-units** check box.
3. Click **Surcharges** tab. For this example, you assign a surcharge of $1.00 to all local outgoing and incoming calls. You also add a surcharge of $2.00 to all national outgoing and incoming calls.
4. Click the first line and enter the following information:
   - Rule Name: **`Local Calls`**
   - Call Type: **`Local`**
   - Cost/Call: **`1.00`**
   - Transmit Call: **`Enabled`**
5. Click the second line and enter the following information:
   - Rule Name: **`National Calls`**
   - Call Type: **`National`**
   - Cost/Call: **`2.00`**

- Transmit Call: **`Enabled`**

6 Leave the remaining fields in each line at their defaults.

This completes the steps for defining surcharges for Guest Rooms.

Define surcharges for Suites

To define the surcharges for the surcharge group Suites, perform the following steps.

1 Click **Suites** from the Surcharging profile **Room Group Surcharge.**

2 Click **Members** tab, and then click the **Organizational Uni**t drop-down list box. Select **Rooms International/Downtown Property/Suites**. Since there are no sub-units to this node that require additional surcharges, you can turn off the **Include Sub-units** check box.

3 Click **Surcharges** tab. For this example, you assign a surcharge of $2.00 to all outgoing calls only. Click the first line and enter the following information:

- Rule Name: **`Outgoing Calls`**
- Call Type: **`Outgoing Calls`**
- Cost/Call: **`2.00`**
- Transmit Call: **`Enabled`**

4 Leave the remaining fields and boxes at their defaults.

This completes the steps for defining surcharges for Suites. Now that you have defined the surcharges for this surcharge profile, you can enter it in the Telephone Configuration table (next).

Enter Telephone Configuration

The Telephone Configuration Database is the key to pricing calls and tracing them to their destinations. This database defines the type of costing used through each defined service and includes any additional costs defined for your system and location. Each defined service uses predefined location books and rate tables based on your telecommunications carrier's offerings.

The TBS uses this configuration information to cost the call records and report on them.

Now that you have all of the elements required to construct your telephone configuration, you must add them to this table. The Telephone Configuration table (in the Telephone Configuration Database editor) is sorted into the following three components:

- General information (includes internal call definitions)
- Node information
- Service definitions (trunks)

You can define multiple nodes for each telephone configuration. As well, you can define multiple service definitions for each node.

The following sections describe how to create each of these components.

Create Telephone Configuration (general information)

The first part of the Telephone Configuration table contains its general information and optional costing for internal calls.

To create a new telephone configuration table and enter its general information, perform the following steps.

1. Click **Telephone Configuration** menu option, and then click **File > New Configuration.** A data entry form appears in the right pane allowing you to enter this telephone configuration's general information.
2. Enter a descriptive name for this configuration by typing **`Telephone Configuration Rooms International`** in the **Telephone Configuration** box.
3. Specify the Call Digit Translation table that is used for this Telephone Configuration by selecting Sample CDT from the **Call Digit Translation** drop-down list box. You previously defined this table in the **Call Digit Translation** function.

4 Select the surcharge definition from the **Call Party Surcharge Profile** drop-down list box. For this example, select Room Group Surcharge. This applies the surcharges that you defined for the hotel guest rooms and suites.

5 If your CS 1000 or Meridian 1 system outputs CDR for internal calls (that is, calls made between extensions within the system), then enter these costs in the Internal Calls fields of this table. For this example, leave the default values in these fields.

This completes the steps for creating a new Telephone Configuration table and entering its general information.

Add Main Node (Node Information Editor)

The next step in defining this telephone configuration is to enter the general information for the main node. Since a telephone configuration can contain multiple nodes, you must define each node separately. For example, your company's telephone system may span different offices (nodes). For this example, you are creating the minimum required node—the Main Node.

To add a node to this defined configuration, click the menu option **Telephone Configuration Rooms International** (that you just created in the previous steps), and then click **File > New Node**.

Perform the following steps to edit this node.

1 In the **Node Name** box, enter the name for this node. For example, enter **`Main Node`**. The title in the navigation tree changes to Main Node.

2 In the **Node Location** box, enter the city and province/state for your company. For example, enter **`Dallas, Texas`**.

3 In the **Main Phone Number** box, enter the telephone number for this location. For example, enter **`214-555-1111`**.

4 From the **Location Book** drop-down list box, select **VHDATA Location Book**.

5 Since this is the main node, leave the **Time Zone Adjustment** box blank.

6 Since this is the main node, leave the **Currency Exchange** box at its default value: 1.

7 Leave the **Main Node** check box turned on. Only one node can have this checked.

8 If the rates defined for this node require additional taxes, then select them from the **Tax Information** drop-down list boxes. You must have defined these taxes in the Taxes editor.

This completes the steps for defining the Main Node. The next step is to create the service definitions for this node. That is, you must enter the costing parameters for the different trunk groups in this node.

Add long-distance service definition to Main Node

Now that you have selected a node, you must enter its pricing definitions. These pricing definitions apply to different trunk groups. For example, trunks 1 to 5 may be used for regular long-distance calling, and trunks 7 and 8 may be used exclusively for toll free calls.

To add a long-distance service definition to the main node, click **Main Node** menu option, and then click **File > New Service/Trunk Group**.

This creates another menu option under it entitled New Service 1, and displays the tabs in which you can enter the service definition, fixed and variable and carrier costs, and reporting options. Click the following tabs to enter the information for this service:

Service Definition tab

In this tab, enter the general information for this service definition. This includes the range of trunks using this service as well as its billing parameters.

To enter the service definition, Perform the following steps.

1. In the Name box, enter **`Main Trunk Group`** over the New Service 1 text. Notice that the tree menu option changes to reflect what you just typed.
2. Leave the Termination option (Public Switch Network) and the Billing Parameters fields in their defaults.
3. In the Trunk Numbers table, enter the trunk range for this trunk group in your CS 1000 or Meridian 1 system. In the Low Range and High Range fields, enter the trunk range (up to 7 digits) in the format "[R][R]RMMM", where "[R][R]R" represents the trunk route number and "MMM" represents the trunk member number. The digits "RMMM" are required. The leading digits "[R][R]" are optional if they are 0. In this example, the trunk route is 2 and the trunk member numbers are 001 to 046.

   Therefore, for this example, enter the following:

   - Total Number of Equipped Trunks: **1**
   - Line/Description: **CO Trunks**
   - Low Range: **2001**
   - High Range: **2046**

Fixed Costs tab

If your system requires fixed costs for these trunk groups, then enter them in the Fixed Costs tab. You can enter fixed costs per minute, per call, per meter pulse, or per month. As well, you can define these costs for outgoing or incoming calls.

Variable and Carrier Costing tab

In this tab, enter the costs that are be applied to calls made on this service. You can enter costs for both outgoing and incoming calls. For outgoing calls, you can enter variable costs based solely on the digit patterns, or you can enter the

carrier costs that are based on these digit patterns. The carrier costs vary depending on the destinations of the outgoing calls.

For this example, you select the predefined Carrier Pricing Template for all calls using this service. The Carrier Pricing Template can then distinguish between different types of calls for its costing.

To select the carrier costing for this service, perform the following steps.

1. In the Carrier Costing by Digits Comments box, enter **`Outgoing Calls`**.
2. Leave the VPN Location Book box blank.
3. From the Carrier Pricing Template drop-down list box, select **Sample Rates**.
4. Leave the % Cost Adjust box blank.

Report Options tab

In this tab, enter the call reporting options for this trunk service. This allows you to define how calls that use this service appear on reports. For example, you can suppress all incoming calls.

To enter the call reporting options for all calls using this service, perform the following steps.

1. Click the first record in this grid.
2. From the Call Type drop-down list box, select **All Calls**.
3. From the Cost Field drop-down list box, select **DDD**. This determines the report grouping and summary field on reports. Cost fields are defined in the Cost Field table.
4. From the Print Option drop-down list box, select **Detail**. This indicates that these calls should appear in the main report body of the detail reports.

5 In the Route Description box, enter **DDD**. This is the route used on detail reports for this call.

This completes the defined service for the main node. You have now defined how calls from this trunk should be costed according to the template you created. Click **File > Close** to save this information and return to the TBS main window.

Step 9: Test telephone configuration

Now that you have entered your system's costing model and configuration, you should test the accuracy of the configuration. To do so, you must apply these costs to the collected call records and print some reports to review the generated costs.

Apply costs to call records

The TBS applies the costs based on your Telephone Configuration Database and Rate Tables as a separate step to data collection. That is, once you have collected the call records from the CS 1000 or Meridian 1 system, you must apply costs to them as a separate step.

To apply these costs to the collected call records, perform the following steps.

1 Click **Tools** > **Costing** > **Start** from the TBS window.

2 From the Start Costing dialog box that appears, select the Batch Costing Mode option. This performs a one-time costing of all non-costed call records.

3 In the Available Telephone Configurations list, turn on the Telephone Configuration Rooms International check box. This applies this specific telephone configuration to these call records.

4 Click **Start** to cost the call records. The TBS then starts the costing procedure.

5 Click **Costing** tab Status view of the System Tasks pane to check this process. Once it displays the message `The Costing task`

`has completed`, you are ready to generate reports based on the costed call records.

This completes the steps involved in costing the call records.

Generate reports

Generate the following reports to test the accuracy of your configuration:

Trunk Diagnostic Report

The Trunk Diagnostic Report compares trunk ranges you entered in the Telephone Configuration with the trunks that have actual call activity.

To print this report, perform the following steps.

1. Click **File > Reports** (or simply click the Reports icon) from the TBS main window.
2. In the **Reports** dialog box that appears, double-click the **TBS Reports** menu option, and then double-click **Utility Tools > Trunk Diagnostic Report**.
3. From the **Output Type** drop-down list box, select **Printer**.
4. From the **Configuration** drop-down list box, select **Telephone Configuration Rooms International.** This represents the telephone configuration you defined.
5. Click **Go** to print the report.

Extension Diagnostic Report

The Extension Diagnostic Report compares the extensions assigned to users in the Corporate Directories (that is, employees, external parties, and roles and projects) with the extensions that have actual call activity.

To print this report, perform the following steps.

1. Click **File > Reports** from the TBS main window.

2 In the **Reports** dialog box that appears, double-click the **TBS Reports** menu option, and then double-click **Utility Tools > Extension Diagnostic Report**.

3 From the **Output Type** drop-down list box, select **Printer**.

4 From the Configuration drop-down list box, select **Telephone Configuration Rooms International.** This represents the telephone configuration you defined.

5 Click **Go** to print the report.

Exception Chronological Report

The Exception Chronological Report lists in chronological order all of the calls that were made, and then collected by the TBS. Review this report to verify that the calls were processed and costed accurately. Look for calls that have no location (except toll free calls). Check that the long-distance calls have costs assigned to them and that local calls do not. Some common errors in the Telephone Configuration Database include incorrect access codes and missing trunks.

To print this report, perform the following steps.

1 Click **File > Reports** from the TBS main window. The **Reporting** dialog box appears.

2 From the **TBS Reports** menu folder in the Reporting navigation tree (left pane), double-click the **Cost Analysis** folder.

3 From the list of reports that appears, click **Exception Chronological Report**.

4 From the **Output Type** drop-down list box, select **Printer**.

5 From the **Configuration** drop-down list box, select **Telephone Configuration Rooms International**. This represents the telephone configuration you just defined.

6 Click **Go** to print the report.

If any of these reports appears inaccurate, then review your input and make any necessary adjustments to your telephone configuration.

Step 10: Set up Data Transmission

The Data Transmission function is used to transmit the call records to an external device or location, such as a Property Management System. For this example, you set up the TBS to post the call usage records for your hotel's guests to a Property Management System using the ACK/NAK interface protocol. Once you have set up the data transmission, you run it in real time along with the data collection (see next).

To set up the data transmission for this example, perform the following steps.

1. Click **Options > System Configuration** from the TBS main window, and then click the **Transmission** tab.
2. From the **Connection Type** drop-down list box, select **Direct**.
3. In the Port Settings boxes, enter the communications parameters required to connect to your Property Management System. For example, enter the following settings:
   - Port: **`COM2`**
   - Baud Rate: **`9600`**
   - Data Bits: **`8`**
   - Parity: **`None`**
   - Stop Bits: **`1`**
4. Click **Record Format** command button from the **Transmission** tab, and then enter the fields you want to include in the call records that are posted.
5. Click the ellipsis (…) next to the **Record Filter** drop-down list box to select the filters for the call records being posted. For this example, you only post call records that have extensions 100 to 999. These extensions represent the guest rooms and suites in your hotel.

6 From the **Filters** dialog box that appears, click **Add**.

7 From the **Filter** dialog box, click **Extension/Trunk** tab.

8 Enter the filters in Table 3 on page 162 to post only the call records for extensions 100 to 999. Note that the first line represents outgoing calls from this range of extensions. The second line represents all incoming calls to this range of extensions:

Table 3Trunks and extensions filters

Originating ID Type	Low	High	Terminating ID Type	Low	High	Show Cost
Extension	100	999				Both
			Extension	100	999	Both

9 Click **Include** option and the **Activate** check box to include this filter range.

10 In the Filter Name box, enter the name for this filter. For this example, enter **`Guest Rooms and Suites`**.

11 Click **OK** to save this filter range and return to the previous dialog box. Click **OK** again to save it and return to the Transmission tab.

12 Click the **Record Filter** drop-down list box, and then select **Guest Rooms and Suites**.

13 From the **Interface Protocol** list box, select **ACK/NAK**.

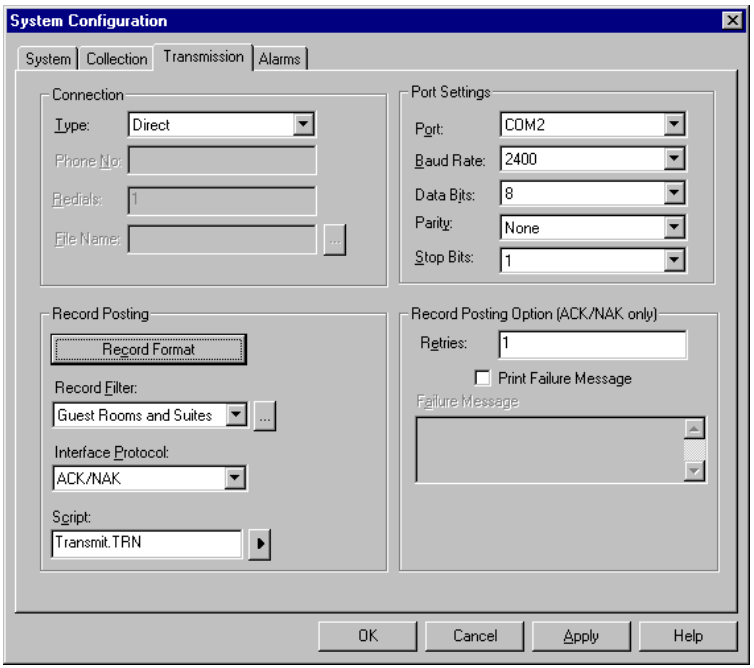
14 In the Script box, enter **`Transmit.TRN`**.

15 Under the **Record Posting Options** (ACK/NAK only) options, enter **`1`** in the Retries field.

16 Click **OK** to save these settings and return to the TBS main window.

This completes the steps used for entering your data transmission values. The following dialog box as shown in Figure 39 on page 163 represents these settings:

Figure 39 Transmission tab



Step 11: Start data collection and transmission

Now that you have entered all of your collection, costing, and transmission settings, you are ready to start collecting and processing your call records. The following sections describe how to start the data collection, call costing, and data transmission processes in real time.

Start collection

To start collecting call records from a CS 1000 or Meridian 1 system through the MDR-2000 ISD, perform the following steps.

1 Click **Tools > Collection > Start** from the TBS main window. The Start Collection dialog box appears prompting you to select the collection mode and start the data collection.

2 Select **Real Time** option to have the system continuously collect CDR records from the MDR-2000 ISD.

3 Click **Start**. The data collection starts. The status pane displays a list of the call records as they are collected.

Start costing

To start costing the call records, perform the following steps.

1 Click **Tools > Costing > Start** from the TBS main window. The Start Costing dialog box appears prompting you to select the costing mode and start the call costing process.

2 Select **Real Time** option to have the system apply costs to the collected call records continuously.

3 In the Available Telephone Configurations list, turn on the Telephone Configuration Rooms International check box. This applies this specific telephone configuration to these call records.

4 Click **Start** to start costing the call records.

Start transmission

To start posting the call records to the Property Management System, perform the following steps.

1 From the TBS main window, click **Tools > Transmission > Start**. The **Start Transmission** dialog box appears prompting you to select the data transmission mode and start the data transmission.

2 Select **Real Time** option to have the system continuously transmit calls that have not been transmitted.

3 Click **Start** to start transmitting the call records.

This completes the steps required to set up the TBS to process call records for hospitality billing.

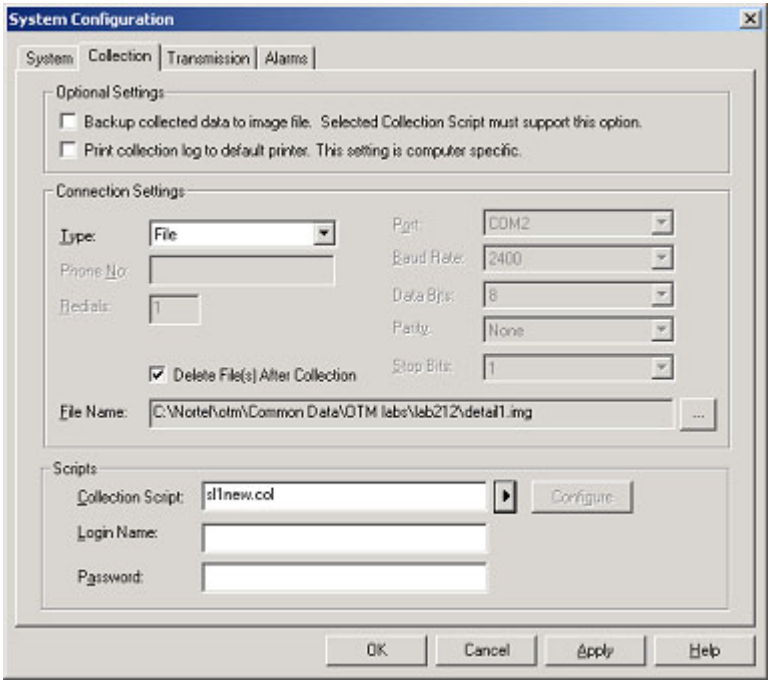
Setting up TBS to collect data from OTM DBA Application

The OTM Data Buffering and Access (DBA) application collects CDR data from the Communication Server 1000 and Meridian 1 systems and stores this data to a text file, titled detail1.img, in the OTM system. As the DBA collects data, it will append this data to this text file. The TBS (once set up) can then collect the CDR data from this file for processing and reporting.

This section describes how to set up the TBS to collect this data from the DBA application. This section assumes that you have already set up the DBA application in the CS 1000 and Meridian 1 systems, and in OTM. For more information about this application, refer to the “Data Buffering and Access” section in the “Common Services” chapter of OTM.

To set up the TBS to collect data from the OTM DBA application (see Figure 40 on page 166), perform the following steps.

Figure 40 Setting up TBS to collect data from OTM DBA



1 Access the **System Configuration Collection** function by clicking **Options > System Configuration** from the TBS main window. Click the **Collection** tab (Figure 40) and enter the following information.

2 From the **Connection Settings** Type drop-down list box, select **File**.

3 Enable the **Delete File (s) After Collection** check box. If this check box is disabled (for example, not checked), then duplicate records will be collected.

4 In the **File Name** field, enter directory and filename of the DBA text file (e.g., C:\Nortel\Common Data\Sample Site\Sample Meridian 1\detail1.img). To search through your system for this file, click the ellipsis command (...) next to the **File Name** field and navigate to the file.

5 In the **Collection Scripts** field, enter either sl1new.col or sl1old.col, depending on the type of CDR data produced by the system.

6 Click **OK** to save these settings.

This completes the steps to setting up the TBS to collect data from the OTM DBA application. You can now run the Collection command (from the **Tools** menu) to collect this data.

E-mail reporting feature

TBS, GCAS, CCCR, and CRS utilize the OTM e-mail reporting feature.

Before you begin

To enable this feature you must have the following:

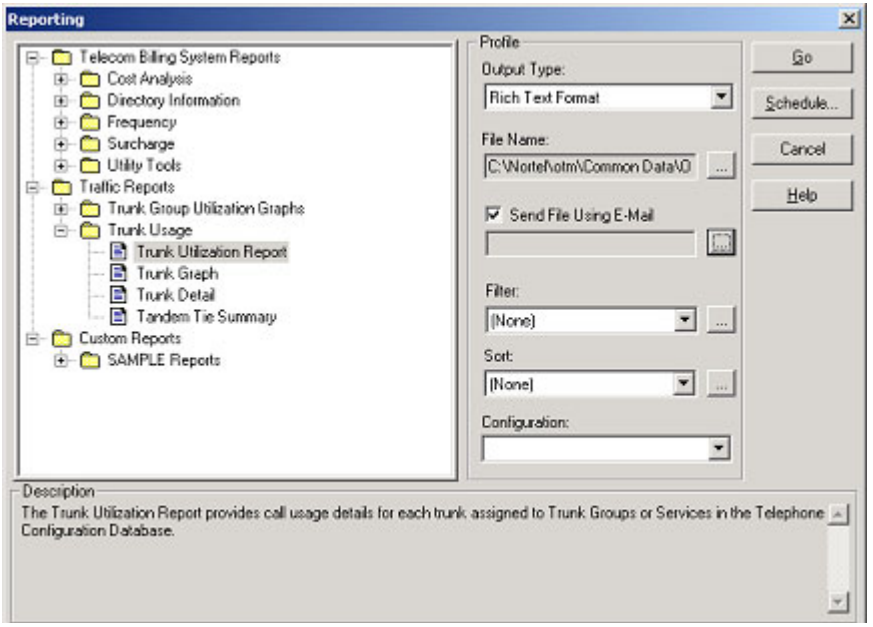
- Internet access
- Access rights to an Simple Mail Transfer Protocol (SMTP) (outgoing) mail server.

Using the E-mail feature

The following steps describe how to use the e-mail feature, beginning with the Reporting dialog.

1 In TBS, GCAS, or CCCR menu, select **File>Reports** The **Reporting** window appears (see Figure 41 on page 168). In CRS, the **Reporting** dialog is the main screen of the application.

Figure 41 Reporting



2 From the **Reporting** window, select a report.

3 Complete the **Filter**, **Sort** and **Configuration** portions of the profile, as applicable.

4 To create a report file type, select either **Rich Text Format** or **Snapshot Format** from the **Output Type** drop-down list box (only these two file types are supported by the e-mail feature).

5 When sending a file by e-mail, the Reporting system saves a copy of the RTF or Snapshot Format file using a name and location that you specify and the e-mail feature attaches a copy of this file to the e-mail created.

   a To name and select a location for storing the RTF or Snapshot file, select the ellipsis (…) button from the **File Name** text box.

   b Provide a file name and file location for the RTF or Snapshot Format report file using this common Windows dialog box.

Select the **Open** button to complete this step and close this dialog.

6 Select the **Send File Using E-Mail** check box.

7 To configure your system and the current report for e-mail capabilities, select the ellipsis (…) button next to the text box below the **Send File Using E-Mail** check box

a Provide mail server access information; select the **Mail Server Configuration** button. The **Mail Server Configuration** window opens (Figure 42).

Note: Mail Server Configuration information is shared across all reports and across all applications. Enter this information only once, and only return if the information changes. You may need to contact the administrator of your e-mail server(s) in order to provide the information required by the Mail Server Configuration dialog.

Figure 42 Mail Server Configuration

b In the **SMTP outgoing Mail Server** text box, provide the name/address of your SMTP Server (for example, the server that is

used for your outgoing e-mail) This can be provided in "dotted quad" (for example, 123.45.678.9) or domain name (e.g., mymailhost.com) format.

c In the **Sender Display Name** text box provide the name that you would like to display in the "From" name in the Inbox (es) of your e-mail recipient(s).

d In the **Sender E-Mail Address** textbox, provide your email address.

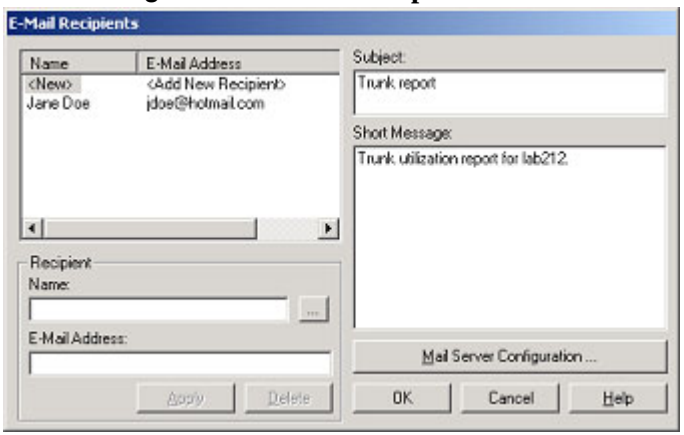
e In the **SMTP Port** text box, provide the SMTP port on the SMTP Mail Server you are using. The SMTP standard port is 25. Change this parameter only if your SMTP Mail Server's SMTP port was changed to a non-standard value.

f Check **SMTP Server Requires Authentication** check box if your SMTP mail server is set up to require login authentication. If your mail server does support authentication, provide your Account Name and Password in the text boxes provided.

Note: Very few SMTP mail servers are set up to require login authentication. If you check this check box and your SMTP Server does not support authentication, the login/ authentication process may time out and the mail may fail to send. (This failure will be logged in the Event Log.)

g Click **OK** to save the information you have entered on the Mail Server Configuration dialog and exit to the **E-Mail Recipients** window (Figure 43).

Figure 43 E-Mail Recipients



8 Add a new e-mail recipient by completing the following:

a Select the **<New> <Add New Recipient>** row from under the Name and E-mail Address list box.

b Choose one of two following methods to complete the Name and E-mail Address (for example, mailbox@computer, e.g., johnd@Acme.com) text boxes:

- **Manual method** - manually enter the information.
- **Auto method** - To view a list of available names in the databases, click the ellipsis command (…) next to this field. This accesses the Entity Selector dialog box from which you can select a predefined employee, external party, or role or project. (If an e-mail address has been assigned to the Entity you selected in the databases, this e-mail address is auto-inserted into the E-Mail Address text box.)

Note: The Recipient Name you provide is for informational purposes only and helps you identify different e-mail addresses by their proper names.

c Enter the recipient's name and e-mail address and click **Apply**.

d Repeat this step for each e-mail recipient you wish to include.

9 Attach the report file to the e-mail by entering a subject line and message in the following fields.

- **Subject**: enter the text that will appear on the Subject line of the e-mail message.
- **Short Message**: enter a short message that will accompany the e-mail.

10 Click **OK** to save the information.

11 To run the report and send it by e-mail, select the **GO** button (or Schedule button if applicable).

12 View the Event Log to determine if the report was produced and e-mailed successfully or failed.

Chapter 3
Consolidated Call Cost Reports (CCCR)

This chapter provides basic information on setting up and running CCCR. Along with a brief outline of its main features and functions, this chapter contains step-by-step instructions that assist you in setting up CCCR.

Introduction

CCCR is OTM's system integration and reporting application. CCCR combines data from the corporate directories in each of your OTM systems and generates billing reports based on this consolidated data. Specifically used for the OTM TBS, the CCCR application reports on your calling activity across multiple systems on a single OTM server.

Used in conjunction with the TBS, CCCR synchronizes your organization's information and calling activity from the individual OTM systems. You still use the TBS to collect and cost the CDR data for each system. Once this data is processed, you then use CCCR to consolidate the corporate data from each enabled system into its read-only database for reporting. The resulting corporate database is for the use of CCCR only, and cannot be viewed or edited by other applications.

Overview

The following is an overview of some CCCR features:

- The consolidated reports provide details on the actual telephone usage of the different sites and systems across your entire organization. Management can then isolate individual users or departments who are not utilizing the telephone system properly through misuse or neglect.
- Its intuitive corporate editor allows you to merge the different organizational hierarchies from your OTM systems into a single consolidated server.

- The OTM **Scheduler** application can be used to set up the database synchronization and report generation functions to run at scheduled intervals. This way, once you have initially set up the databases in CCCR, you can use the Scheduler to generate your consolidated reports automatically.
- Its alternate currency option allows you to include two different currencies on your consolidated reports.

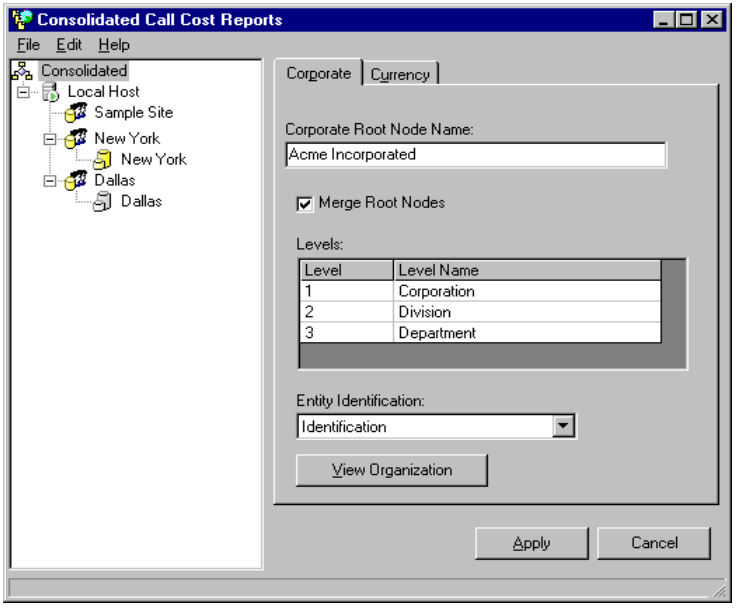
Using CCCR

This section contains a brief overview of the CCCR interface. For complete details on each of its functions, refer to the online Help.

Interface

The **CCCR** main window is the main interface from which you define the consolidated server and systems, set up the corporate properties, and generate your reports. See Figure 44 on page 175.

Figure 44 CCCR



File menu

The following **File** menu commands are used to synchronize the corporate database, generate reports, and exit from CCCR:

- **Synchronize Corporate Data**
- **Reports**
- **Exit**

Synchronize Corporate Data

The **Synchronize Corporate Data** commands are used to synchronize the data from the different systems that you have added to the CCCR database. These systems appear in the Consolidated Server list: The Synchronize Corporate Data commands are as follows:

- **Start**
- **Schedule**

Reports

CCCR includes a number of reports that provide you with details about your organization's calling activities. These reports are based on the call records that you have collected from the different OTM systems in your organization, and then saved to the CCCR database. This reporting function is used to generate the reports to selected output devices (for example, printers) based on definable filters.

Reporting options

The following options are used to select the output device for the report as well as its filters. These options appear in the Profile section (right side) of the Reporting dialog box:

Output Type: The Output Type drop-down list box contains a list of output formats for the selected report. You can select from the following options: Screen, Printer, Rich Text Format, HTML Format, and Snapshot Format.

File Name: In the File Name box, enter the name of the file to which the report is exported.

Send File Using E-Mail: The Send File Using E-Mail option allows you to e-mail a copy of the report to selected e-mail addresses.

Filter: The Filter definitions are used to select the reporting criteria for your reports.

Reporting commands

The following is a list of the **Report Generator** commands:

- **Go**
- **Schedule**
- **Cancel**

- **Help**

List of reports

The following is a list of the reports that are available for CCCR:

- Entity Detail Report
- Entity Summary Report
- Entity Rollup Summary Reports
- Account Code Summary Report
- Account Code Rollup Summary Reports

Exit

The **Exit** command ends the current CCCR session.

Edit menu

The **Edit** menu accesses the Refresh Site List command.

Refresh Site List

The **Refresh Site List** command refreshes the list of sites and systems for a selected server in the Consolidated Server list. This ensures that the server is up to date with the most current site and system information before data synchronization. For example, if you add sites and systems to the server and you update its costing configuration, then you use the **Refresh Site List** command to update the server with this most recent information. When you invoke this command, CCCR re-queries the selected server to reconstruct the list of sites and systems.

Consolidated Server list

The **Consolidated Server** list (left pane of the CCCR main window) displays (in a navigation tree format) the server that has been defined for CCCR. The server's nodes display all of the OTM sites and systems that have been

assigned to it. The root node for this list (labeled Consolidated) lists the defined server along with its sites and systems. The default server (labeled Local Host) contains the sites and systems that you have defined for OTM. To view the sites and systems within the server, double-click the server name from the navigation tree. Once you have opened the navigation trees for these sites and systems, click the navigation tree command buttons to expand the menus.

Each system in this list is identified by an icon. These icons allow you to view, at a glance, which systems are enabled in the CCCR configuration database. Systems that are enabled for consolidation are identified by a yellow icon. Systems that are disabled are identified by a gray icon. By default, systems are disabled. Use the System Properties fields to enable these systems.

Use this list to view and edit the consolidated server and systems in CCCR. To edit the properties of a server or system, click the name of the server or system in this navigation tree. The corresponding server or system properties fields appear in the right pane.

Server Properties

The Server Properties fields contain general information about the sites and systems that are being consolidated into the server of the CCCR database.

To edit the properties of the server, select the server name from the Consolidated Server list (left pane of this window). In the Server Properties fields that appear, enter the following information:

Server Name: This field contains the name of the server as it appears in the navigation tree of the Consolidated Server list. By default, it is the same name as the Server URL. Enter a new name by typing over the existing name.

Server URL: This read-only field displays the original name of this server.

Description: In this field, enter a description of this server. This is for informational purposes only.

System Properties

The System Properties fields contain general information about each system that has been assigned to the server.

To edit the properties of a system, select the system from the Consolidated Server list (left pane of this window). In the System Properties fields that appear, enter the following information:

Enabled: Turn on the Enabled check box to activate this system as part of CCCR. This adds the TBS's data to the CCCR database. If this check box is turned on (that is, this system is enabled), the icon next to the system in the Consolidated Server list turns yellow; otherwise, the icon is gray. These icons allow you to view, at a glance, which systems are enabled for the CCCR configuration database. If this check box is turned off (that is, this system is disabled), the TBS data from this system is not included in any reports. By default, each system is disabled.

Name: This read-only field identifies this system. You previously named the system when you created it in the OTM Navigator.

Costing Configuration: This drop-down list box contains a list of all of the telephone configurations that are part of the systems included in the server. From this drop-down list box, select the telephone configuration to be used to cost this system on your reports. This list box is auto-populated from the originating system. If this system contains only one configuration, then that configuration appears in this drop-down list box by default; otherwise, it defaults to (None). You must select a configuration from this list before this system can be enabled.

Currency: This drop-down list box lists the currencies that have previously been defined in the Currency Exchange Rates grid of the Currency Properties tab. From this drop-down list box, select which currency you want to use for this system's reports. By default, it displays Local Currency.

Corporate Properties

The Corporate Properties tab contains the basic information required to create a consolidated version of the OTM corporate directory. These properties

determine how the different systems are merged into the new consolidated root node of CCCR.

Corporate Root Node Name: This field contains the name of the consolidated root node. In this box, enter the name of your organization. This becomes the root node of the newly consolidated corporate hierarchy.

Merge Root Nodes: The Merge Root Nodes option determines how the organizational hierarchies in the different systems are combined within the new root node. Enable the Merge Root Nodes option to merge common nodes within your hierarchy under a single node. For example, if you have two systems, each with a Sales and Support department, that you want to merge under a main node containing these departments, then enable this option.

Levels Table: The Levels table contains the names of the different levels in the consolidated corporate directory (for example, Corporate, Division, and Department). This prevents conflicts between databases if different systems have their levels defined differently. The default values in this table are the same as those in the OTM corporate directories.

Entity Identification: The Entity Identification value determines how the corporate entities are identified in the consolidated database. When the original corporate directories are consolidated into the new CCCR database, an entity's record is consolidated only if the chosen field is the same on both records. Select the following values from this drop-down list box: Identification, E-mail, LDAP ID, or Login Name.

View Organization: Click **View Organization** to view the current organizational structure in the consolidated corporate directory. This accesses the Consolidated Organizational View dialog box, which displays a navigation tree of the organizational levels in the newly consolidated corporate directory. This displays ORG as the root node until you first consolidate the systems.

Currency Properties

CCCR allows you to define currency settings that are independent from the settings in the individual OTM systems. This way, you can define the main (local) and alternate currencies used by the reports in CCCR. These currency

settings do not necessarily need to match the local and alternate currencies from each of your OTM systems. Use the Currency Properties tab to configure the different currency values and exchange rates for CCCR.

Currency Name: This read-only field displays the name of the currently selected main currency. This is the main currency that is used on all reports generated by CCCR. To change this currency, click Configure. This accesses the OTM Navigator's Currency Configuration dialog box in which you can enter your local and alternate currencies.

Alternate Currency: This read-only field displays the name of the currently selected alternate currency. This is the alternate currency that is used on all reports generated by CCCR. If no alternate currency is selected, or the alternate currency has been disabled, then this field is blank.

Configure: Click **Configure** to define the local and alternate currencies used for CCCR. This accesses the OTM Navigator's Currency Configuration dialog box in which you can enter your local and alternate currencies.

Currency Exchange Rates: This table contains the different currencies and exchange rates used across your consolidated systems. In this table, enter the names of the different currencies used in your systems, as well as the current multiplier used to convert each currency from the local currency to that selected currency. By default, this table contains only one Local Currency entry with an exchange rate of 1.

Getting started

This section describes how to access CCCR and set it up for initial use. Use the following instructions to be able to configure this application to synchronize the corporate databases from the OTM systems and generate your consolidated reports.

Note that the CCCR application is accessible only from the OTM Server and not from OTM Clients.

Before using CCCR, install and configure it as part of the OTM system. Refer to *Optivity Telephony Manager: Installation and Configuration*

(553-3001-230) for complete details on installing this application as part of OTM.

Systems access and setup

The following is a summary of the steps required to set up CCCR and generate reports for it. These steps assume that you have already set up the OTM databases with your company's information.

1. Set up your sites and systems
2. Assign the TBS application to each applicable system.
3. Populate the OTM employee databases with the required organizational hierarchy and entity information. Remember to completely set up the TBS for all of your sites and systems before proceeding with CCCR.

The following is a summary of the steps to set up CCCR.

1.Run CCCR from the OTM Navigator.

2.Assign systems to the consolidated server.

3.Download and synchronize the corporate data to the CCCR database.

4.Review and edit the levels in the consolidated organizational hierarchy.

5.Select the local and alternate currencies to be used on the reports.

6.Generate the desired detail and summary reports.

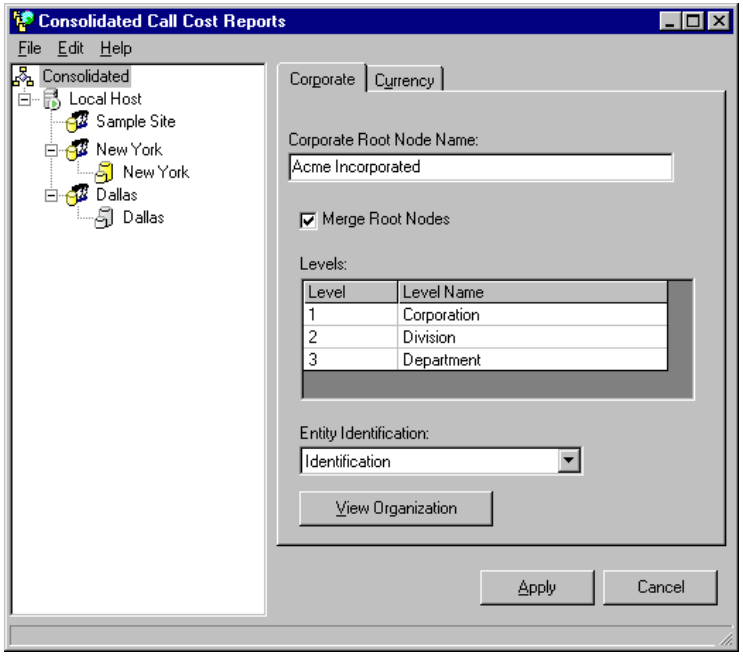
Step 1: Run CCCR

Before you can set up CCCR, you must first run it from the OTM Navigator. Since CCCR is not assigned to a specific site or system, you can simply access it from the OTM Navigator.

Perform the following steps to run CCCR from OTM.

1. Run OTM by clicking OTM Navigator from the StartUp program group.
2. From the OTM Navigator window, click **Utilities > CCCR**. This accesses the main CCCR window. See Figure 46 on page 185.

Figure 45 CCCR



Step 2: Assign systems to consolidated server

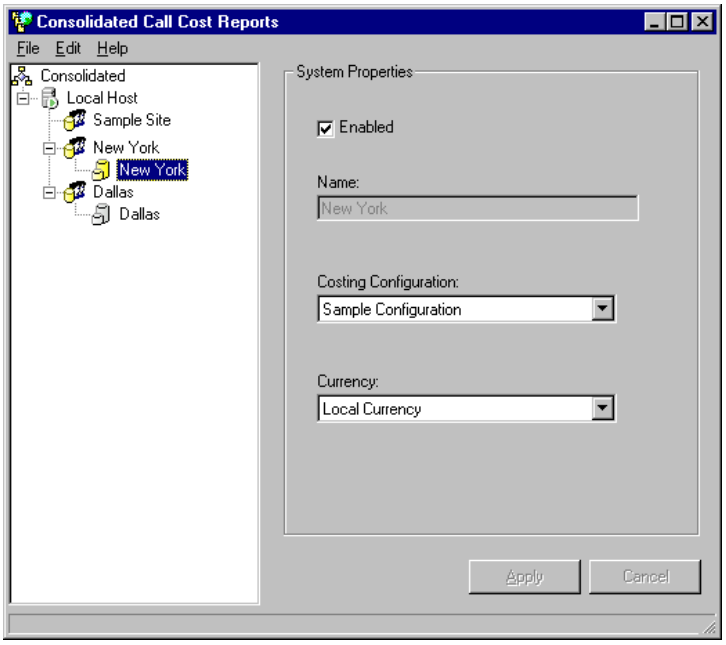
To allow for the consolidation of data from the different systems in your organization, CCCR stores the directory structure of all of the OTM sites and systems in a consolidated database. This directory structure represents the defined OTM sites and systems that have the TBS application assigned to them.

When you access the Consolidated Server list, CCCR displays the default consolidated server along with all of the defined OTM sites and systems. This site and system list is auto-populated when you expand the server node (or when you select Edit > Refresh Site List). By default, the systems that appear in this list are not enabled for consolidation. That is, even though they appear in this list, they are not actually part of the consolidated database. You must select each system and assign it to the consolidated server database.

Perform the following steps to assign your systems to the consolidated server database.

1. Access the Consolidated Server list and expand the server node labeled Local Host. See Figure 46 on page 185. This displays all of the sites and systems that you have defined in OTM. Only the systems that contain the TBS application appear in this list. By default, each system is disabled for consolidated (identified by a gray icon).
2. Click the name of the system that you want to enable for consolidation (for example, New York). The System Properties fields for this system appears.
3. Click **Enabled** check box.
4. Select a costing configuration from the Costing Configuration drop-down list box. If you have defined a single costing configuration for this system, then this drop-down list box defaults to that defined configuration. If you have defined multiple configurations, then this drop-down list box defaults to <None>. You must, therefore, select from the list of defined configurations (for example, Sample Configuration).
5. Select a sample currency from the Currency drop-down list box. Click **Apply** to assign this system to the Consolidated server database. This enabled system is identified by a yellow icon.
6. Repeat the above steps for each system that you want to enable for the consolidated server database.

Figure 46 Consolidated Server list



Once you have completed these steps, the Consolidated Server list displays all of the systems that have just been assigned to the consolidated server database.

Step 3: Synchronize corporate data

The next step is to synchronize the corporate data from your OTM systems with the CCCR database. This function downloads the corporate database records from the assigned OTM systems (that is, the Organizational Hierarchy, Employee, External Parties, and Roles/Projects Databases). It then synchronizes this data with the CCCR database to ensure that the consolidated corporate information is up to date with the most current information from your OTM systems.

To run the database synchronization, click **File > Synchronize Corporate Data > Start**. Once you start a synchronization process, a status dialog box appears displaying its progress.

Step 4: Review and edit levels in consolidated organizational hierarchy

The following steps outline how to edit the levels in the consolidated organizational hierarchy. Once you have synchronized the corporate data from the OTM systems with the CCCR database, you should review the defined levels to ensure that they reflect your organizational hierarchy. If you need to edit these levels, you can do so by accessing the Corporate Properties tab of the CCCR window. This tab contains the basic information required to create a consolidated version of the OTM corporate directory. These properties determine how the different systems are merged into the new consolidated root node of CCCR.

Perform the following steps to edit the levels in the consolidated organizational hierarchy.

1. Click **Corporate** tab from the CCCR window.
2. In the Corporate Root Node Name box, enter a name for the consolidated hierarchy. For this example, enter **`Acme Incorporated`**.
3. Enable the Merge Root Nodes option to merge common nodes within your hierarchy under a single node.
4. Leave the Levels table with the default values. This table contains the names of the different levels in the consolidated corporate directory (for example, Corporate, Division, and Department).
5. From the Entity Identification drop-down list box, select the value that determines how the corporate entities are identified in the consolidated database. For this example, select Identification.
6. Click **Apply** to save these settings.

To review the consolidated organizational hierarchy, click View Organization. This accesses the Consolidated Organizational View dialog box, which displays all of the different levels in the consolidated database. Review these levels to ensure that they accurately represent the consolidated organizational hierarchy for your company (that is, all of the organizational

levels are structured correctly). If you need to change this structure, then repeat the above steps and change your settings as required.

Step 5: Select local and alternate currencies

The following steps outline how to select the local and alternate currencies that are used on your reports. Note that this is an optional step, and is required only if you want to use two different currencies for the costs on your reports.

Perform the following steps to select the local and alternate currencies for your reports.

1. Click **Currency** tab from the CCCR window.
2. Click **Configure** to define the local and alternate currencies used for CCCR. This accesses the OTM Navigator's Currency Configuration dialog box in which you can enter your local and alternate currencies. You can also access this dialog box directly from the OTM Navigator.
3. For this example, select US Dollars as the local currency. Select **Local Currency** tab, and then enter the following information:
   - Currency Name: **`US Dollars`**
   - Currency Symbol: **`$`**
   - Position of Currency Symbol: **`*1.1`**
   - Negative Number Format: **`(*1.1)`**
   - Decimal Symbol: **`.`**
   - No. of Digits after Decimal: **`2`**
   - Digit Grouping Symbol: **`,`**
   - Number of Digits in Group: **`3`**
4. For this example, you select Canadian Dollars as the alternate currency. Select **Alternate Currency** tab, and then enter the following information:
   - Currency Name: Canadian **`Dollars`**
   - Currency Symbol: **`$`**

- Position of Currency Symbol: **`*1.1`**
- Negative Number Format: **`(*1.1)`**
- Decimal Symbol: **`.`**
- No. of Digits after Decimal: **`2`**
- Digit Grouping Symbol: **`,`**
- Number of Digits in Group: **`3`**
- Currency Exchange Rate: **`1.54`**

5 Click **Apply** and **OK** from the Currency Configuration dialog box to save these settings and return to the CCCR window. Notice that the Currency Name and Alternate Currency fields are updated with these new values.

6 The Currency Exchange Rates table displays only the Local Currency with the exchange rate of 1.00. To add the exchange rate for Canadian Dollars, right-click over this grid, and then select Add from the pop-up menu.

7 In the blank line (cell) that appears, enter the following information:

- Currency: **`Canadian Dollars`**
- Exchange Multiplier: **`1.54`**

8 Once you have entered these settings, click **Apply** to save them to the CCCR configuration database.

Once you have defined a currency, you must assign it to the different systems that are collecting data in that currency. To do so, access the System Properties for the different systems and assign the new currency to each system. Refer to "Step 2: Assign systems to consolidated server" (page 183).

Step 6: Generate reports

Once you have set up CCCR to reflect your organizational data, you are ready to generate your consolidated reports. This step outlines how to generate a sample report entitled Entity Detail Report. To generate a different report, you can perform the same steps as outlined in this example. Simply select a different report from the Report list.

To generate the Entity Detail Report, perform the following steps.

1. Access the Reporting dialog box by selecting **File > Reports** from the CCCR main window.
2. Select the desired report by clicking the corresponding report name in the Report navigation tree. For example, to generate the Entity Detail Report, select **Entity Detail Report** from the Report navigation tree.
3. Select the type of output from the Output Type drop-down list box. For example, to print the report, select **Printer**.
4. Select the optional filters from the Filter drop-down list box.
5. Click **Go** to generate the consolidated report.

   CCCR automatically downloads the Call Database information from all of the enabled systems and generate the Entity Detail Report, which details the calling activity for these systems.

   This completes the steps required to set up CCCR.

Creating custom logos on reports

The reports in CCCR each contain a common header graphic, which is located at the top left corner of the report. This graphic helps you to easily identify the reports as part of CCCR.

CCCR allows you to edit this graphic, or even replace it with another graphic, by simply editing a bitmap (BMP) file. You can replace this graphic with another more descriptive design, such as your company logo, to suit your own needs. For example, you can include your company logo on your reports to

provide you with professional-looking reports that are customized for your organization.

Caution: Be careful when editing this graphic file. If the file is too large, it can cause errors with the generated reports. To ensure that the original graphic file is secure, you should make a backup copy of it. To do so, copy the file Logo.bmp from the CCCR directory to another directory, or simply rename it (for example, Backup_Logo.bmp).

Perform the following steps to create a custom graphic or logo for your reports.

1. Use a graphics program such as MS Paint to create a bitmap with the following dimensions: 3.73" (W) by 0.86" (H).
2. Insert or create the new graphic (for example, your company logo) in the bitmap file.
3. Save this file as Logo.bmp to the dedicated CCCR drive and directory (for example, C:\Nortel\Millennium\RootData\CCCR\Logo.bmp).

   To help you to use the correct dimensions for your logo, you can make a copy of the original graphic file Logo.bmp and use it as a template for your own graphic. Simply open the file Logo.bmp and insert the new graphic in the file.

   CCCR automatically uses this logo on your reports.

Chapter 4
TBS Web Reporting

This chapter provides basic information on setting up and running TBS Web Reporting. Along with a brief outline of its main functions, this chapter also contains procedures and reference information to assist you in setting up TBS Web Reporting.

Introduction

TBS Web Reporting is the OTM's web-based reporting application for your telecommunications network. With TBS Web Reporting, you can generate reports containing data from the TBS through your intranet or Internet server. These reports provide you with valuable information about your organization's calling activities.

The TBS application is the OTM's telephone cost accounting and billing application. It collects call records from your telephone system, calculates usage costs based on defined rates and configurations, and allocates these costs to the appropriate users in your organization. TBS Web Reporting generates reports summarizing and detailing these costs. It provides you with an easy method of accessing the TBS information.

Overview

The following is an overview of some of the features of TBS Web Reporting:

- TBS Web Reporting produces a variety of costing reports detailing your organization's calling activities.
- Based on your access rights, you can view call detail information for any level in your organizational hierarchy (for example, departments and users), both from a summary level and a detail level.
- Its reports provide details on the actual telephone usage of your system. Management can then isolate individual users or departments who are not utilizing the telephone system properly through misuse or neglect.

- Its intuitive interface allows you to easily access this information through any PC. Simply run a web browser, access the OTM web server, and run TBS Web Reporting.

Using TBS Web Reporting

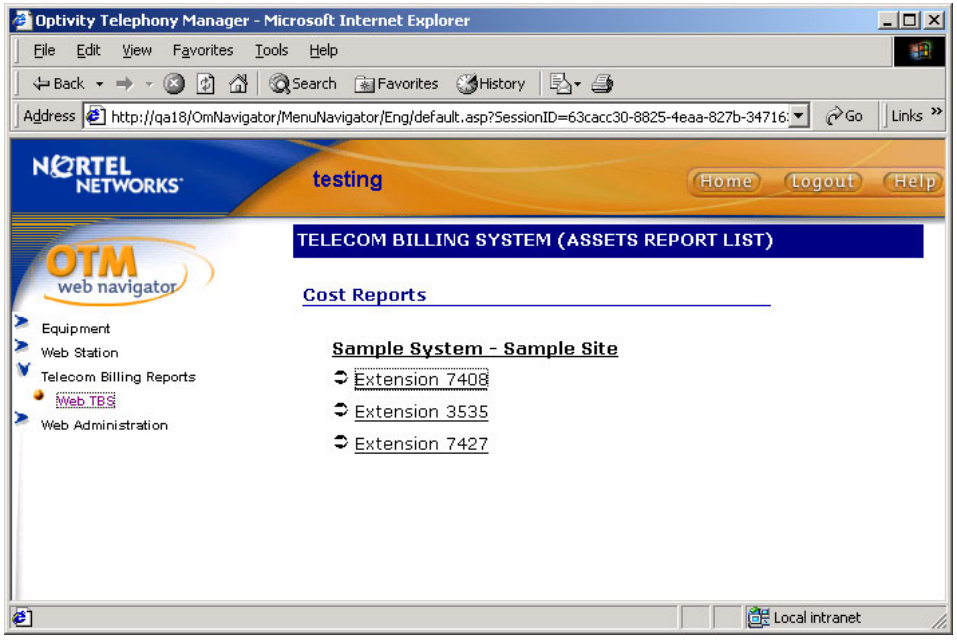
This section contains a brief overview of the TBS Web Reporting main web interface. For complete details on each of its functions, refer to the online Help.

TBS Web Reports

The TBS reports provide you with thorough and detailed information about your telephone system. These reports detail and summarize your telephone system's usage, assign costs to the appropriate cost centers, and display information on your system's organizational databases.

Once you have logged in to OTM web, you can view the TBS Web Reports. TFigure 47 on page 193 shows a sample page listing these reports:

Figure 47 TBS Web Reports page



List of reports

The following sections briefly describe the reports available for TBS Web Reporting. Based on your access rights, some or all of these reports appear in this list.

Cost reports

The following reports provide summaries and details of your organization's telephone usage costs. These are based on your extensions, authorization codes, or account codes:

- Extension Summary Report
- Authorization Code Summary Report
- Account Code Summary Report

Level reports

The following reports provide roll-up summaries of telephone usage costs for your organization based on extensions, authorization codes, or account codes. They access summary and detail reports displaying this data based on the organizational level. For example, the Extension Roll-up Report consists of the Extension Roll-up Report for the current organizational level, the Extension Summary Report for its sublevel, and so on, until you have reached the detail report for each user:

- Extension Roll-up Report
- Authorization Code Roll-up Report
- Account Code Roll-up Report

Frequency/Digits reports

The following reports provide roll-up summaries of your calling activity based on frequency of calls to specific numbers and locations:

- Frequently Called Numbers Report
- Frequently Called Location Report
- Area Code Summary Report
- Ring Time by Time of Day Report
- Ring Time by Extension Report
- Hold Time by Time of Day Report
- Hold Time by Extension Report

Trunk reports

The following reports provide call usage details for each trunk or trunk group in your organization:

- Trunk Group Utilization Report
- Trunk Utilization Report

Diagnostic reports

The following reports list all of the extensions and trunks that are entered in the telephone configuration that have no call activity, as well as all of the extensions and trunks that have call activity but have not been entered in the telephone configuration:

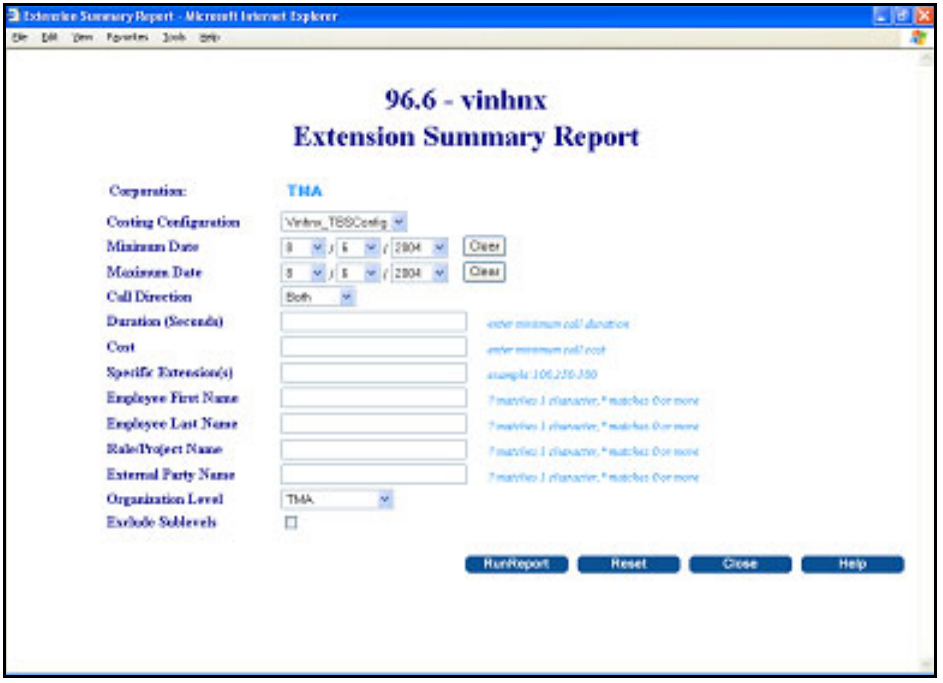
- Extension Diagnostic Report
- Trunk Diagnostic Report

Filters and configurations

The Filters page is used to select the reporting criteria for your reports. This allows you to generate reports based on very specific requirements. Whenever you select a report from the TBS page, the Filters page appears allowing you to select its filters.

Figure 48 on page 196 is a sample Filters page for the Extension Summary Report. Based on the report you select, the Filters page displays different filters:

Figure 48 Filters page for Extension Summary Report



Getting started

This section describes how to access and use TBS Web Reporting.

Before using TBS Web Reporting, you must install and configure it as part of the OTM. You must then assign it to a site and system. Refer to *Optivity Telephony Manager: Installation and Configuration* (553-3001-230) for complete details on installing this application and assigning it to a site and system.

Additional system requirements

The server and client PCs that run TBS Web Reporting each have their own hardware and software requirements. The server PC is used to store the files for TBS Web Reporting. The client PC is used only to access this application's reports through a browser, such as Microsoft Internet Explorer or Netscape Navigator. Since this client PC can be different from the server PC, these system requirements may differ from those of OTM common services. Refer to *Optivity Telephony Manager: Installation and Configuration* (553-3001-230) for a complete list of hardware and software requirements for all of the OTM applications.

Server setup and installation

Before installing TBS Web Reporting:

1. Set up your server and install the Internet Information Server (IIS) to allow other users to have remote web access to the server.
2. Install the OTM common services and TBS onto the server on which you are installing TBS Web Reporting.
3. Install OTM web services onto the web server before attempting to run it. Refer to the web services chapter in *Optivity Telephony Manager: System Administration* (553-3001-330) for instructions on installing and setting up OTM Web Services.

Installation

The TBS Web Reporting installation kit includes all of the components you need to install, configure, and run the program as part of OTM web. The Setup utility installs each of the required components for TBS Web Reporting and prompts you for specific information pertaining to your system (for example, install drive, directory, program folder, and so on). During the installation procedure, enter your system information as directed.

System access

The following sections list the steps that are required to access OTM web and run TBS Web Reporting as an end user.

Setting up TBS Web Reporting

Ensure to set up the access rights for the OTM web users, and selected TBS Web Reporting as a reporting application.

1. To install and set up TBS Web Reporting as part of OTM web, refer to *Optivity Telephony Manager: Installation and Configuration* (553-3001-230).
2. To set up the access rights for TBS Web Reporting, refer to the subsection “Enable web desktop access” under “Directory Services” in “Chapter 3: Common Services” of *Optivity Telephony Manager: System Administration* (553-3001-330)

Accessing TBS Web Reporting

To log in to OTM web and run TBS Web Reporting, perform the following steps.

1. Log on to OTM web by pointing your browser to the OTM Server.
2. From the **Login** page, enter your Login Name and Password. This accesses the **My Profile** page. This page contains your user information, as well as links to the Web Reporting applications to which you have access.
3. From the web **Desktop Services** navigation tree in the **My Profile** page, select **Billing Reports**. This accesses the **Billing Reports** page, which contains links to your TBS reports.
4. From the **Billing Reports** page, access the **TBS Reports** page by clicking a system link. You can also access your reports through any defined personal assets. This accesses the **TBS Reports** page for the selected system or asset.

5 To view a report from the TBS, click the report name in the **TBS Reports** page. From here, you can select a telephone configuration table and any filters for the report.

6 Click **Run Report** to view the selected report.

Chapter 5
Call Tracking

This chapter provides basic information on setting up and running Call Tracking. It also includes an example to assist you in setting Call Tracking up for a real-time monitoring session.

Introduction

Call Tracking is OTM's call monitor and alarm program. Its graphs indicate trends and provide displays of unusual calls enabling you to adjust your equipment and services to maximize your resources. Call Tracking monitors and displays information output from the CS 1000 or Meridian 1 system. It then accumulates the data and displays the information in different formats in its graphical displays.

Call Tracking consists of several graphical displays that list your monitored call data. Each of these is a separate window or dialog box, which displays the call information in a unique format.

The main window is the background for these graphical display windows. The commands in its main window provide you with the overall functions of these graphical displays.

Call Tracking also provides alarm generating functions, which can be set up to warn you of unusual calling patterns. This is useful in the quick detection of unauthorized telephone calls that occur with toll fraud. You can define multiple alarm templates to detect different calling patterns, including calls exceeding a certain duration, calls made at unusual times, and toll calls. Call Tracking can also be configured to output different types of alarms including visible and audible alarms on your PC, which is generated following the completion of the call.

Using Call Tracking

This section describes the Call Tracking main menus, their functions, and the graphical displays. For a detailed description of each menu command and function, refer to the online Help.

Call Tracking menus

The main Call Tracking window is the background for the graphical display windows. Use these commands to configure the appearance of your graphical displays, connect to the system, and define your alarms.

File menu

The **File** menu contains commands used to affect the main action of the call records as they are collected. Use these functions to pause the data collection, print graphical displays of data, reset the call collection and display Employee Database information.

The following is a list of the functions and commands in this menu:

- **Call Tracking ID Code...**
- **Schedule**
- **Print...**
- **Print Setup...**
- **Reset...**
- **Reset Longest Call...**
- **Employee Database Options**
- **Detail File**
- **Pause**
- **Exit**

Real Time menu

The Real Time menu contains functions and commands used to view communications parameters, select connection scripts, and connect to the

system to start and end a real-time monitoring session. For a complete list of script files used for communications and data collection, refer to "Appendix B: Script File Summary" in *Optivity Telephony Manager: System Administration* (553-3001-330).

The following is a list of the functions and commands in this menu:

- **Edit Database...**
- **Connect**
- **Disconnect**

Filters menu

Use the **Filters** commands to set the filters for the call records as they are being monitored. You can, for example, set a filter to have Call Tracking only collect call records having a set minimum call duration. You can select up to ten different filters and have Call Tracking include or exclude only the call records matching these filters.

The following is a list of the functions and commands in this menu:

- **Definitions...**
- **Include**
- **Exclude**

Alarms menu

The **Alarms** menu contains functions used to configure the Call Tracking alarm monitor. These alarms can be sent to your PC as a visual or audible alarm, or to an external device such as a log file, printer, or network workstation.

The **Alarm Definitions** function is used to define the alarm criteria. The **Alarm Setup** function is used to define the alarm parameters used by the **Alarm Definitions**. These parameters are global and can, therefore, be used by any alarm definitions. This includes such information as audible alarm time-outs, and inactivity alarm monitoring.

The **Alarm Log** displays a listing of all of the alarm calls that have been logged using the Log File alarm mode. This displays the last 200 call records that signaled the alarms having the **Log File** mode turned on. Each alarm definition accompanies the call record that it signaled. In this way, you can scan through the call records based on specific alarm definitions.

The following is a list of the functions and commands in this menu:

- **Definition...**
- **Setup...**
- **Log...**

Display menu

The **Display** menu contains functions used to manipulate the graphical display windows in the Call Tracking main window. As well, it lists the names of the graphical displays allowing you to select them by name.

The following is a summary of the graphical display commands:

- **Display Detail Digits**
- **Auto Save Positions**
- **Arrange Icons**
- **All Icons**
- **Tile**
- **Refresh**
- **System Times**
- **Recent Call History**
- **Current Call Info**
- **Custom Speedometer**
- **Calls by Duration**
- **Call Origin**
- **In/Out/Tand/Int**
- **Ring Time**

Graphical displays

The individual graphical displays are the main graphical components of Call Tracking. Each graphical display highlights call records in a different statistical format. These windows continuously display your call record information. To edit the parameters and features of each graphical display, use their control-menu commands.

The following sections provide a brief description of these graphical displays:

System Times

The **System Times** graphical display lists the current time (as recorded by the PC's internal clock). It also displays the date and time when you started collecting the call record information.

Note: The time in this dialog box is the PC time, not the CS 1000 or Meridian 1 system time.

Recent Call History

The **Recent Call History** dialog box lists the details of the last 20 call records. Refer to this dialog box to review the most recent call records. Each call record consists of the originating and terminating IDs (extensions or trunks), the date and time, duration, the digits dialed, and any authorization codes.

Current Call Information

The **Current Call Information** graphical display lists the information of the most recent call. It includes such items as the start date and time, the originating and terminating ID, the call duration, the digits dialed, the Acct Code and the Auth Code. If you enabled the **Additional Info** command from the **Employee Database Options** drop-down menu, then this window also includes the information of the employee sending or receiving this call.

User Defined

The **Custom Speedometer** is a speedometer-like analogue gauge (call meter), which displays user-definable calling activity as a percentage value. This call meter represents the percentage of calls that meet the criteria specified for a sample size. It also contains an alarm function that activates a predefined alarm when an alarm threshold is exceeded.

Calls by Duration

The **Calls by Duration** window displays a percentage of the total calls separated into distinct time periods. Each item in the graph represents the percentage of total calls that have a duration within each time period, and lists the total for each period as a percentage of the total calls. Use this graph to spot trends in call duration and gain an overview of your telephone system's usage. Select the intervals for this graph by selecting the total range from its control menu.

Calls Origin

The **Calls Origin** window displays the total percentage of incoming, outgoing, tandem, and internal calls. The horizontal axis contains each type of call, and the vertical axis lists their percentage values based on total calls.

Incoming

The **Incoming** window displays the percentage of incoming, outgoing, tandem, and internal call records. This represents a different way of displaying a specific call type as shown in **Calls Origin**.

Ring Time

The **Ring Time** window contains two graphs that display ring time information (time taken for an extension to ring before it is answered or disconnected). If your release of CS 1000 or Meridian 1 system software supports ring-time output, then this dialog box displays this information.

Sample setup for real-time monitoring

The following sample setup provides information on setting up Call Tracking to connect to the system and collect CDR data in real-time mode.

Sample scenario

A user requires a connection between Call Tracking and the system. See Figure 49 on page 208. CDR data is output through the SDI port and is routed via a y-cable to a CDR buffer unit and to a modem (connected to Call Tracking). This y-cable allows the CDR data to be output in two identical data streams: one for storage in the buffer unit (optional), and the other for real-time monitoring by Call Tracking.

The following details apply:

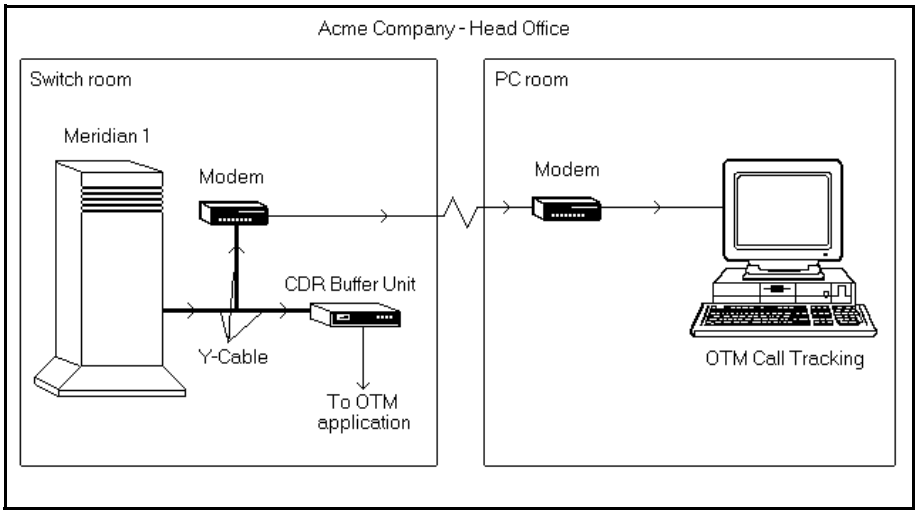
- The company's Meridian 1 is located in the switch room of the Head Office and is configured to output CDR information from its SDI port.
- A y-cable is connected to the SDI port with one connection to a CDR buffer unit (optional), and the second to a modem.
- The modem at the Meridian 1 is configured to communicate with another modem at the Head Office in the PC room. This second modem is attached to the PC (on COM1) on which Call Tracking is installed.
- Call Tracking requires a script file (SL1.SCR) to collect the CDR records from the Meridian 1 through these modems in real time. This script is provided with the OTM kit.

Since this scenario outlines the steps required to set up Call Tracking, it assumes that you have already entered the following information:

- Call Tracking was installed as part of the OTM installation on a PC in the Head Office.

- A site and system have been created and configured for this connection to the Meridian 1. The site is entitled Acme Company, and the system is entitled Head Office. Its communications parameters for the SDI port have already been entered in the Communications tab of the OTM System Configuration function.

Figure 49 Schematic for sample scenario



Steps to connecting Call Tracking to a system

The following is a summary of the tasks required to start Call Tracking and connect to the system in real-time mode:

- Run OTM and open a site and system.
- Run Call Tracking.
- Verify communications parameters and select a script file.
- Ensure hardware connections.

- Collect CDR data from the CS 1000 or Meridian 1 system in real-time mode.

Note: The instructions in this example assume that you have already installed the OTM software and completed the OTM configuration tasks described in the "Common Services" chapter of *Optivity Telephony Manager: System Administration* (553-3001-330). It also assumes that you have created a site and system on which you can assign Call Tracking.

Step 1: Run OTM and open site/system

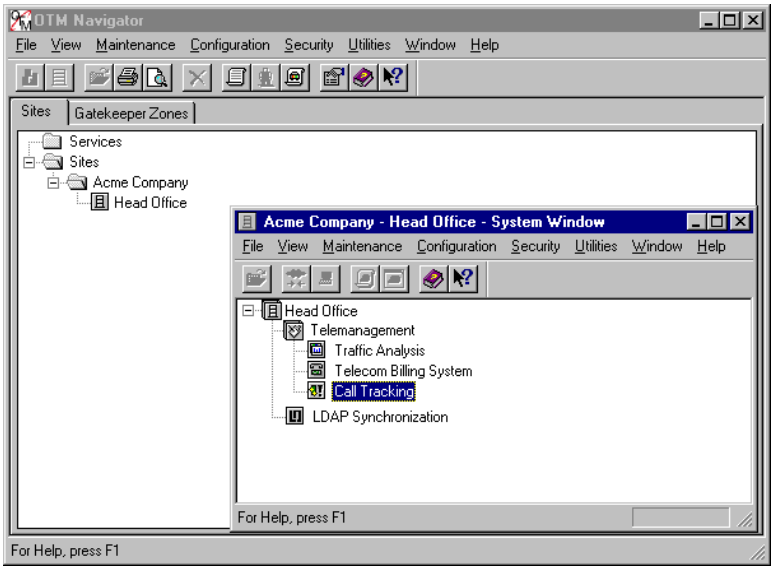
Before you run Call Tracking, you must first run the **OTM Navigato**r, and open this site and system. You can then select **Call Tracking** from the **Telemanagement** menu in this system's window.

To open the site and system, perform the following steps:

1. Run the **OTM Navigator** by clicking the **OTM Navigator** icon. At the **Login dialog** box that appears, enter your user ID and password, and then click **OK** to continue.
2. To open the site and system for this example (for example, site name is Acme Company and system name is Head Office), click **Acme Company** in the **OTM Navigator** window, and then double-click **Head Office** from this site.

   This accesses the system window for **Head Office** as shown in Figure 50.

Figure 50 OTM Navigator



Step 2: Run Call Tracking

To run **Call Tracking**, perform the following steps.

1. From the system window, click the **Telemanagement** menu option. This displays the OTM applications that have been assigned to the system Head Office under Telemanagement.
2. To run **Call Tracking**, double-click **Call Tracking** from this menu. The **Call Tracking** main window appears. You can then use its commands to connect to the system and start the call monitoring session.

Step 3: Verify communications parameters and select script file

To verify the communications parameters for **Call Tracking** in this system:

1. Click **Edit Database** from the **Real Time** drop-down menu. The **Communications Database** dialog box appears displaying the communications and connection criteria for the system. These appear for informational purposes.
2. Review the data in these fields to ensure that they correspond to your system's connection parameters. If any of these values are incorrect, then return to the **System Configuration** function in the **OTM Navigator**, access the Communications tab and edit them. When you access the **Call Tracking Communications Database** again, its values are changed accordingly.
3. To select the script file that is used for this communications session, select **SL1.SCR** from the Script Setup Name drop-down list box. Click **OK** to save this selection, and then exit to the main window.

Step 4: Ensure hardware connections

Since this system requires a modem connection between the PC and the system, you must ensure that the equipment used in this connection is turned on and running properly.

Check the following equipment:

- y-Cable attached to CS 1000 or Meridian 1 system (switch room)
- modem attached to y-cable (switch room)
- modem attached to PC (PC room)

Refer to the documentation provided with this equipment to ensure that they are properly connected and configured.

Step 5: Collect CDR data from the system in real-time mode

To start collecting and monitoring the call records using the defined communications criteria,

1. Click **Connect** from the **Real Time** drop-down menu. There is a brief delay as the communications process is initiated. Call Tracking then monitors calls as they are recorded by the system.
2. To pause the monitoring process at any time, click **Pause** from the **File** drop-down menu. Click **Pause** again to resume the monitoring session.
3. To stop the real-time monitoring of the calls, click **Disconnect** from the **Real Time** drop-down menu. Click **Connect** again to resume the session.

This completes the steps required to establish a real-time connection for Call Tracking. Use the **Call Tracking Filter Definition** and **Graphical Display** commands to control the display of the call records as they are collected from the system. As well, you can use the Alarm Setup function to define any required alarms for this session.

Getting started

This section provides an overview of how to run and set up Call Tracking for a real-time and data file monitoring session.

Before using Call Tracking, you must install and configure it as part of OTM. Refer to *Optivity Telephony Manager: Installation and Configuration* (553-3001-230) for complete details on installing this application.

System access

After you have assigned Call Tracking to a site and system, you can set it up to collect and monitor CDR data and configure its alarms. The following sections highlight the main functions required to use Call Tracking to collect and monitor CDR data in real-time mode and from a data file.

Note: Before proceeding with the data collection, you must first select the data collection filename, or the communications script used for the connection to the system.

If Call Tracking has not been assigned to this system, it does not appear in the Telemanagement menu.

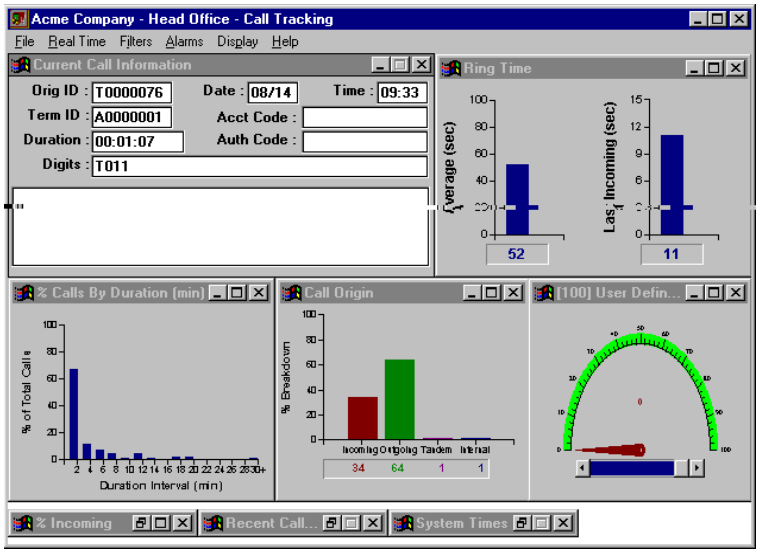
To assign Call Tracking to this system, access the **OTM System Properties** function.

1. In the **Communications** tab, assign a serial profile for Call Tracking by entering it in the **Communications Profile** box.
2. In the **Applications** tab, select the communications profile you just entered in the **Communications** tab, click **Call Tracking** to highlight it, and then click the **Enable** check box.
3. Click **OK** from the **System Properties** dialog box to assign Call Tracking to this system.

Run Call Tracking

To access Call Tracking from the **OTM Navigator**, click the desired site and system, and then click **Call Tracking** from the **Telemanagement** menu. The main Call Tracking window appears. See Figure 51 on page 214.

Figure 51 Call Tracking main window



Set filters

During the Call Tracking session, you can use the **Filters** commands to set the filters for the call records as they are being collected. You can, for example, set a filter to have Call Tracking only collect call records having a set minimum call duration. You can select up to ten different filters and have Call Tracking include or exclude the call records matching these filters.

Set alarms

The **Alarms** function is used to set an alarm monitor to warn of suspicious calls. These alarms can be sent to your PC as a visual or audible alarm, or to an external device such as a log file, printer, or network workstation.

Collect CDR data from the system in real-time mode

Once you have accessed Call Tracking, you can then use the **Real Time** command to initiate a call monitoring session.

Before initiating the real-time data collection and monitoring process, you should first access the Communications Database dialog box and verify the communications settings for Call Tracking on this system. In this dialog box, you can also select the script file that is used for this session.

Verify communications parameters

To verify the communications parameters for this system, click **Edit Database** from the **Real Time** drop-down menu. The **Communications Database** dialog box appears displaying the communications and connection criteria for this system. These are displayed for informational purposes.

Review the data in these fields to ensure that they correspond to your system's connection parameters. If any of these values are incorrect, then return to the System Configuration function in the **OTM Navigator**, access the Communications tab, and edit them. When you access the Call Tracking Communications Database again, its values are changed accordingly.

The next step is to select the script file that is used for this communications session. To select this script file, click the script file name from the **Script Setup Name** drop-down list box (for example, SL1.SCR). Click **OK** to save this selection and exit to the main window.

In certain cases, you may need to collect Call Tracking data from a file (for example, the Data Buffering and Access [DBA] application). You must, therefore, enable the File Collection option in this dialog box. To do so, check the **File Collection** check box and, in the **Filename** box, enter the filename from which the data is collected. The other fields in the **Communications Database** dialog box are grayed out since they do not apply to file collection.

Connect

To initiate a connection to the system and start collecting and monitoring the call records, click **Connect** from the **Real Time** drop-down menu. There is a brief delay as the communications process is initiated. Call Tracking then monitors calls as they are recorded by the system.

If you want to pause the monitoring process at any time, click **Pause** from the **File** drop-down menu.

Click **Pause** again to resume the monitoring session.

To stop the real-time monitoring of the calls, click **Disconnect** from the **Real Time** drop-down menu. Click **Connect** again to resume the session.

Note: During real-time collection, any records which are output from Meridian 1 during Pause mode are lost.

Chapter 6
General Cost Allocation System (GCAS)

This chapter provides basic information on setting up and running the GCAS. It also includes example procedures and reference information to assist you in setting up the GCAS.

Introduction

The GCAS is used to assign usage charges to appropriate individuals or departments within an organization. It can import bill information, identify and log departmental or user-specific spending characteristics, and generate meaningful reports summarizing these costs.

With the GCAS, you can enter billing information either through an imported file or manually from the printed vendor statement. The data can then be used to allocate charges, such as those obtained from cellular calls or pagers, to relevant individuals or departments within your organization. The GCAS generates detail and summary reports, including the billed products or services, associated costs and departments, or persons to be billed.

The following is a summary of some of the GCAS features:

- It allows for effective distribution, tracking, and monitoring of all chargeable costs to departments or persons within an organization.
- Its reports detail products or services purchased, and the appropriate chargeable entity. Management can then effectively monitor and isolate specific costs to various business lines within an organization.
- Billing charges can be imported directly from a vendor’s electronic bill, thus significantly reducing data entry time.
- The user-friendly hierarchical organizational interface allows for quick, easy, and effective control of the chargeable groups within your organization.

- Intuitive database editors allow you to easily populate, update, and view your database records.

Using GCAS

This section contains an overview of the GCAS functions and databases. It briefly describes their function and purpose. For complete details on each of these functions and their operation, refer to the online Help included with the software.

File menu

The **File** menu contains commands used to manage the bill type records, generate reports, import and export data, and exit from the system.

The following is a list of the functions and commands in this menu:

- **New Bill Type**
- **Delete Bill Type**
- **Reports**
- **General Export**
- **Import Bill Type**
- **Export Bill Type**
- **Archive Bill Type**
- **Merge Bill Type**
- **Purge Bill Type**
- **Exit**

Edit menu

The **Edit** menu accesses the GCAS main databases. These databases contain the corporate information you need to run the GCAS effectively for your organization.

To access these databases, click **Edit** from the main window, and then select the following:

Organizational Hierarchy: This database contains the different structural levels within your organization (for example, departments, divisions, and so on). You can create up to twenty different levels in this hierarchy. The Organizational Hierarchy and the Level editor are used to create, name, and arrange these different organizational levels. The employees in your organization are assigned to these levels. The cost summary reports can then summarize the calling activity and associated usage costs by these levels.

Employees: This database contains information about your organization's employees, which is relevant to the GCAS. It includes such information as your employees' names, telephone extensions, authorization codes, and their locations within the organizational hierarchy. This information is required to allocate charges to the proper extensions and cost centers within your organization.

External Parties: This database contains information about individuals or companies with whom you have regular contact. It includes such information as the external party's name, address, telephone number, and account code.

Roles/Projects: This database contains information about the different roles or projects that require reporting in the GCAS. It is used to assign extensions, authorization codes, or account codes to projects or personnel for reporting purposes.

Asset Assignments: This database defines how the different assets are assigned to the corporate entities in the Employee, External Parties, and Roles/Projects Databases.

Taxes: This editor is used to define the taxes that are applied to the usage or equipment charges of the billing records.

View menu

The **View** menu contains commands and toggles to display various components of the GCAS database.

This menu contains the following commands and toggles:

- **Bill Party**
- **Grid Lines**
- **Status Bar**
- **Refresh**
- **Find**
- **Replace**

Help menu

The **Help** menu offers commands which provide you with assistance as you use the GCAS.

This menu contains the following commands:

- **Help Topics**
- **About the GCAS**

Getting started

This section describes how to access the GCAS and set it up for initial use.

Before using the GCAS, you must install and configure it as part of OTM. You must then assign it to a site and system. Refer to *Optivity Telephony Manager: Installation and Configuration* (553-3001-230) for complete details on installing this application and assigning it to a site and system.

System access

After you have assigned the GCAS to a site and system, you can then run it to assign the usage charges to your organization.

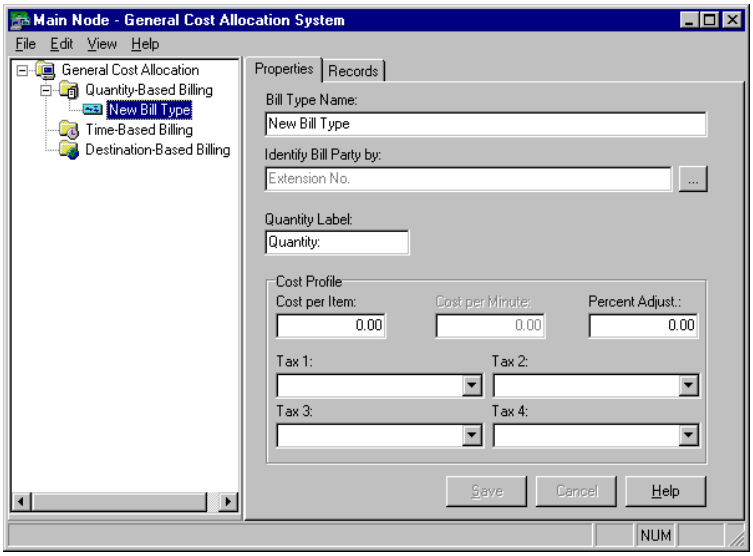
To access the GCAS from the OTM Navigator

1. Click the desired site and system, and then click **GCAS** from the Telemanagement menu. The main **GCAS** window appears.
2. From within this window, define and add your various bill types. Figure 52 on page 221 is an example of the **GCAS** main window displaying the **Properties** tab for a sample quantity-based bill type.

Operating procedures

The following sections outline the steps required to set up the GCAS for initial use. These sections also describe the procedures you should follow when running the GCAS.

Figure 52 GCAS main window



These sections briefly describe how to:

- Create an organizational hierarchy
- Enter employee, external party, and role or project information

- Enter bill type information
- Generate reports

Create organizational hierarchy

The Organizational Hierarchy Database is a structured database containing important information about your organization, including the different organizational levels and how these levels are related (for example, departments within divisions). Once you have set up your organizational levels in this database, you can enter your bill type information and generate reports.

Before any meaningful allocation of billing charges can take place, you should define the logical hierarchical structure of your organization. In short, you are creating a framework that holds and links the billing information in the GCAS to the correct billed entity (that is, the employee or department).

To define your organizational hierarchy, perform the following steps.

1. From the **GCAS** main window, click **Edit > Organizational Hierarchy**.
2. Right-click the folder **ORG**, and from the pop-up menu, click **Rename**. Change ORG to a name that represents the top of your organizational structure. For this example, enter **`Acme Company`**.
3. For this example, the following levels have been defined: Division and Department. Therefore, to add the first level to this organization, right-click the existing folder, and then click **Add New Division**. The first menu option under **Acme Company** appears as New Division 1 in editable form. Type over this default name with the name **`Head Office`**.
4. Right-click **Head Office**, and then click **Add New Department**. The first menu option under **Head Office** appears as New Department 1 in editable form. Type over this default name with **`Sales`**.

This completes the steps required to set up a sample organizational hierarchy with the levels Acme Company (top level), Head Office (Division level), and Sales (Department level).

Enter employee, external party, and role or project information

With your organizational hierarchy now in place, the next step is to enter your company's employee, external party, and role or project information. These are entered in your corporate databases.

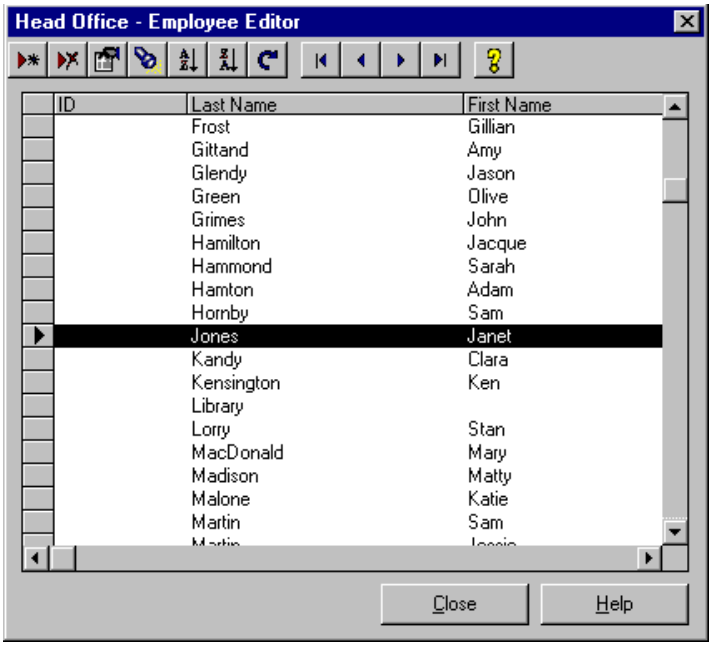
Enter employee information

Employee information is necessary to cost and allocate billing data to the proper individuals and cost centers within your organization.

To enter specific employee information, perform the following steps.

1. From the main window, click **Edit > Employees**. The **Employee Editor** grid dialog box appears. See Figure 53 on page 224.
2. To add an employee to this grid, click **Add New Record**.

Figure 53 Employee Database Employee Editor



3 A blank **Employee Editor** appears. Enter the employee information in the following fields:

- **Identification:** This is a unique identifier for this employee. For this example, enter **`001`**.
- **First, Middle, and Last Name fields:** These fields contain the employee's name (for informational purposes). For this example, enter **`John Adam Smith`**.
- **Job Title:** For this example, enter **`Sales Manager`**.
- **Org. Path:** This represents the employee's location in the organizational hierarchy. For this example, enter **`\Acme Company\Head Office\Sales`**.
- **Manager:** In this field, enter the employee's manager. This can be selected from the drop-down menu. For this example, enter **`M. President`**.

- **Email:** In this field, enter the employee's e-mail address. For this example, enter **`jasmith@acme.com`**.
- **Street No., City, Prov./State, Country, Postal/Zip:** In these fields, enter the employee's address. For this example, leave these fields blank.
- **Description:** In this field, enter any additional comments about this employee. This is for informational purposes only. For this example, leave this field blank.

4 The right pane allows you to add any assets that should be assigned to the employee for billing and reporting purposes. This can include such assets as account codes, extensions, cellular phone, or pagers. To add an asset to this employee, click **Apply**. This enables the **Asset** list.

5 From the **Type** drop-down list box, select the desired asset. For example, select **Account Code**.

6 In the **Account Code** box that appears, enter the account code. For example, enter **`1001`**.

7 Click **OK** to accept these values and return to the previous dialog box. Click **Close** from this grid to exit to the main window.

This completes the steps to entering a sample employee.

Enter external party information

External parties are those individuals or organizations that exist outside the realm of your organization (for example, customers, vendors, and so on).

This database editor is similar to the Employee Database editor. For instructions on editing this type of database, see the example on entering information in the Employee Database.

To enter specific external party information in the External Party Database, perform the following steps.

1 From the main window, click **Edit > External Parties**.

2 The **External Party Editor** grid dialog box appears. To add an external party to this grid, click Add New Record.

3 A blank External Party editor appears. Enter the external party's information in the available fields.

4 Click **OK** to accept these values and return to the previous dialog box. Click **Close** from this grid to exit to the main window.

This completes the steps to entering a sample external party.

Entering roles or projects information

Within the Roles/Projects Database, you can document information relevant to a particular organizational project. For example, within your organization, there can be a marketing project incurring costs. In turn, you can define your billing entity to be the role project name.

This database editor is similar to the Employee Database editor. For instructions on editing this type of database, see the example on entering information in the Employee Database (page 223).

To enter role or project information in the Roles/Projects Database, perform the following steps.

1 From the main window, click **Edit > Roles/Projects**.

2 The **Roles and Projects Editor** grid dialog box appears. To add a role or project to this grid, click **Add New Record**.

3 A blank **Roles and Projects Editor** appears. Enter the role or project information in the available boxes.

4 Click **OK** to accept these values and return to the previous dialog box. Click **Close** from this grid to exit to the main window.

This completes the steps to entering a sample role or project.

Enter bill types

By default, bill types fall into one of three categories: quantity-based, time-based, and destination-based. Quantity-based bill types are defined as

having quantitative amounts and unit charges (for example, office furniture, computers, stationery, and so on). Time-based bill types are defined as having start and finish times (for example, Internet usage). Destination-based bill types are defined as having call attributes such as location, digits dialed and route, and source and destination (for example, cellular or pager calls).

Assign bill to a bill type

After establishing what kind of bill type is best suited to represent your data, the next step is to enter the information from your bill into the GCAS. There are two ways in which you can enter this information. You can import a file or manually enter the data from a printed statement (for example, from a vendor's bill). Whichever method of input used, your first task is to attach your bill to one of the three defined bill types: quantity-based, time-based, or destination-based.

Note: A quantity-based bill type is used for example purposes. The methods of data entry for both time-based and destination-based bill types are fundamentally the same as quantity-based bill types. However, where data entry formats are different, examples and illustrations provide extra guidance.

Example: Quantity-based bill type

To enter a quantity-based bill type, perform the following steps.

1. From the **GCAS** main window, click once on the **Quantity-Based Billing** type option in the navigation tree.
2. Click **File > New Bill Type**.
3. The **Properties** tab appears. Under **Bill Type Name**, identify your bill with an appropriate name. For example, enter **`Office Furniture`**.
4. In the **Identify Bill Party by** box, enter how the billing information for this bill type is associated to the correct billing party in your organization. For example, you can use an employee's extension

number to assign office furniture charges to the employee, or you can use a calling card to assign calling card charges to the employee.

5 To select an existing value or to add a new one, click the ellipsis button (…). The **Billing Key Information** dialog box appears.

6 The left pane displays the Lookup Keys that are used to allocate the bill type charges to the appropriate bill party in your organization. If a Lookup Key is not defined, click **<Define New Bill Party Lookup>**. In the **Identify Bill Party by box**, enter your Lookup Key name.

7 The display mask denotes the format used when entering values relevant to a particular bill type. The display mask characters can be numeric identifying the format of the Lookup Key. Refer to the following tables for examples of mask properties and definitions. You can enter up to 50 characters in this field. Once the new Lookup Key properties have been defined, click **Apply** to save the new Lookup Key into the system.

8 For this example, you assign the office furniture to each employee using their extension numbers. From the list box, click **Extension No.**, and then click **OK**.

Repeat the above steps for each bill type you are defining.

Table 4 and Table 5 the following tables represent the available mask properties:

Table 4Examples of mask properties

Mask	Description
Null String	(Default) No mask. Acts like a standard text box.
###	Example: 321 (extension number)
#### ### ### ###	Example: 1234 567 891 000 (phone card number)
???? ###	Example: ABCD 123 (license plate)
??.#####	Example: AB.12345 (purchase order number)

Table 5Mask characters

Mask	Description
#	Digit placeholder (Optional)
.	Decimal placeholder
‘	Thousands separator
:	Time separator
/	Date separator
&	Character placeholder
>	Convert all the characters that follow to uppercase.
<	Convert all the characters that follow to lowercase.
A	Alphanumeric character placeholder (entry required)
a	Alphanumeric character placeholder (entry optional)
9	Digit placeholder (entry optional)
C	Character or space placeholder
?	Letter placeholder

Enter cost profiles

Having defined your bill party identification key within the Billing Key dialog box, you can now enter your cost profiles (optional). Cost profiles allow you to define additional “fixed” costs and applicable taxes to each billable item within a bill type.

Surcharges or deductions can be applied to an item in any of the following ways:

- A fixed cost per item charge added to the existing item charge. For example, a $0.10 fixed surcharge can be made against each record related to a calling card bill. If a calling card has a base cost of $2.00, the total cost of the record, not including tax, would be $2.10.

- A cost per minute charge applied to each minute of each item. This surcharge is only applicable to time-based and destination-based bill types, and is calculated by multiplying each item's duration (in minutes) by the value entered in this box.
- A percentage adjustment applied against the original charge of each item. To increase each item's charge by 10%, enter 10.00 in the Percent Adjust box.

Define taxes

You have the option of selecting up to four applicable taxes for each bill type. For this example, you enter one applicable tax: the Sample State Tax (SST) of 5%.

To define the taxes for this example, perform the following steps.

1. From the **Properties/Cost Profile** dialog box, click **Edit > Taxes** to launch the **Tax Editor** dialog box.
2. Click the **Add graphical** command button.
3. In the Name box, enter the tax name. For this example, enter **`Sample State Tax`**.
4. In the **Short Name** box, enter an abbreviation of the tax name. For this example, enter **`SST`**.
5. In the **Percentage** box, enter the percentile tax amount. For this example, enter **`5`**.
6. Click **OK** to accept the values and return to the previous dialog box.
7. Once you have defined all of the required taxes, click **Close** to save them and return to the main window.
8. In the **Cost Profile group** box, select the appropriate taxes for your bill type from the **Tax** drop-down list boxes.
9. Once all of the information for your bill type is entered, click **Save** to add the new bill type to the GCAS.

Deleting bill types

To delete a bill type, you need to search the menu view and highlight the desired bill type for deletion. Deletion of a bill type deletes any billing records associated with it. The deleted bill type is then removed from the navigation tree.

To delete a bill type, perform the following steps.

1. From the navigation tree view of the **GCAS** main window, click the bill type to be deleted.
2. Click **File** > **Delete Bill Type**.

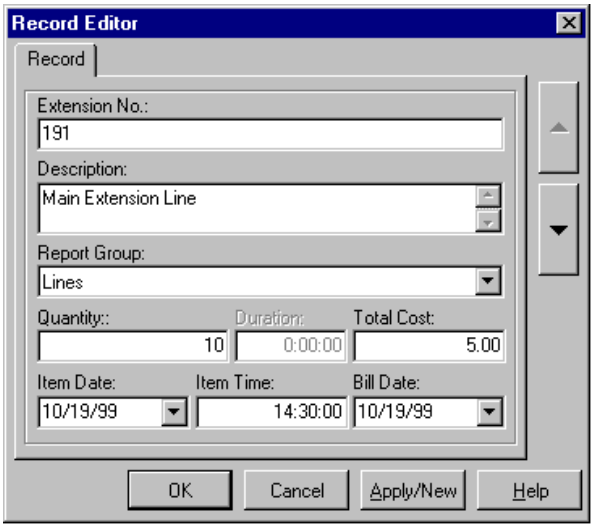
Create billing records

After having defined your bill types, you can now enter individual billing records or items that belong to them.

To enter your new billing records, perform the following steps.

1. From the navigation tree view of the **GCAS** main window, click a defined bill type, and then click **Records** tab.
2. Click **Insert New Record** command button. The **Record Editor** dialog box appears. See Figure 54 on page 232.

Figure 54 Record Editor dialog box



3 In the **Record Editor** dialog box, enter the appropriate value that identifies the bill party for this record. In this example, the employee extension is required. Therefore, in the **Extension No.** box, enter **`191`**.

4 In the **Description** box, enter a description of the bill record. This is an optional field. For this example, enter **`Main Extension Line`**.

5 From the **Report Group** drop-down combo box, select a Report Group value. If an appropriate value is not found in the list, you can type the required value in the **Report Group** drop-down combo box. This value further organizes billed items into smaller subgroups. This is optional. For this example, enter **`Lines`**.

6 In the **Quantity** box, enter the quantity of products or services which are to be billed. For this example, enter **`10`**.

7 In the **Total Cost** box, enter the pre-tax total cost for the specified quantity of items. For this example, enter **`5.00`**.

8 In the **Item Date** box, enter the date assigned to this item (for example, the original purchase date). For this example, enter **10/19/99**.

9 In the **Item Time** box, enter the time assigned to this item (for example, the original purchase time). For this example, enter **14:30:00**.

10 In the **Bill Date** drop-down list, enter the bill date (that is, the date of the bill or bill period on which this record should appear). For this example, enter **10/19/99**.

11 Click **OK** to accept the values, save the records, and return to the main window.

Summary of fields (Record Editor dialog boxes)

You do not necessarily need to enter data into every available data field within the Record Editor. In many instances, you can choose what data you want to enter. However, depending upon what type of bill you are entering, there are specific fields that must be entered with a value.

Table 6 displays a complete summary of all field headings. Each field is designated as a Required or Optional entry.

Table 6Summary of record fields

Field	Description
Billing Key	Required. The “Bill Party Lookup Key” value that associates the charge record to the appropriate bill party in your organization.
Report Group	Optional. Provides the ability to organize the records within a bill type into smaller subgroups for reporting purposes.
Description	Optional. Description of the record.
Item Date	Required. Date that the record was created. Dates appear in the format specified by the “short date format” entered in the regional settings of your PC’s control panel.
Item Time	Optional. Time that the record was created. Time appears in the format hh:mm:ss.

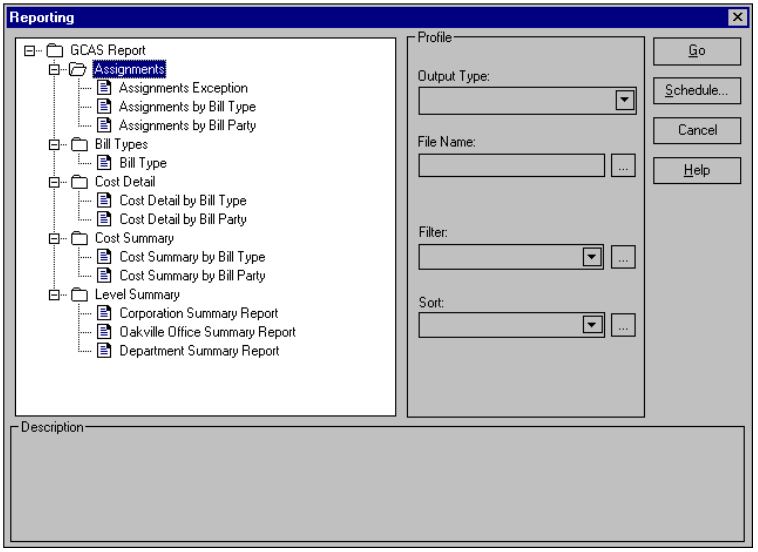
Table 6Summary of record fields (Continued)

Field	Description
Bill Date	Required. Default is the current date.
Quantity	Optional. The quantity of product or service items billed by this record. Default is 1.
Duration	Optional. Applicable for Time and Destination-Based bill types. The default value is 0:00:00, and the format is hhhhh:mm:ss.
Total Cost	Optional. Default is 0.00.
Destination ID	Optional. For Destination-Based bill types. Digits dialed.
Destination Location	Optional. For Destination-Based bill types. Called location.
Source ID	Optional. For Destination-Based bill types. ID of the record source (for example, the source telephone number of a calling card call).
Source Location	Optional. For Destination-Based bill types. Location of where the record was made.
Direction	Optional. For Destination-Based bill types. Incoming or Outgoing.
Route Used	Optional. For Destination-Based bill types.

Generate reports

Once you have created your organizational hierarchy, populated your corporate databases, and entered your billing information, you can generate detail and summary reports listing this information. The reports can appear on the screen, be saved to a file, be sent to a printer, or be sent to an e-mail address. You can also filter and sort information within your bill and, therefore, create reports based on specific information. The following **Reporting** dialog box as shown in Figure 55 illustrates the types of billing reports that can be generated.

Figure 55 Reporting dialog box



To generate a report, perform the following steps.

1. From the **GCAS** main window, click **File > Reports**.
2. Click once on the report that you want to generate from the **Reporting** navigation tree. When you select the report, a brief description of it is visible in the description field at the bottom of this dialog box.
3. Select the desired output device from the **Output Type** drop-down list box in the **Profile** group box. You can choose to output your report to a printer, to the PC's screen, to a file, or to an e-mail address.
4. If you do not want to select filters or sorting criteria for this report, click **Go** to generate the report. See the following steps for information on selecting filter and sorting criteria.

Before you generate your reports, you can select parameters (filters and sorting criteria) that determine what data appears on the report, and how the report details are sorted.

Select report filters

To enter your filter and sort information, perform the following steps.

1. To define a filter, click the ellipsis button (...) next to the **Filter** drop-down list box. This accesses the **Filters** grid dialog box.
2. In the **Filters** grid dialog box, click **Add**. This accesses the **Filter definition** dialog box.
3. In the **Filter definition** dialog box, enter the following filter values:
   - **Filter Name:** In this box, enter the name of the filter. This appears in the Filters grid dialog box list and in the Filter drop-down menu of the Reporting dialog box. You can select this filter by clicking this name in the Filter drop-down menu of the Reporting dialog box.

- **Name in Report:** In this box, enter the name of the filter that appears on the applicable reports.
- **Description:** In this box, enter any additional descriptive information about this filter. This is for informational purposes and also appears in the Filters grid dialog box.

4 Define the report parameters using the various filter tabs in this dialog box. Each tab allows you to define specific information based on your filter requirements.

Several of the values entered on each tab are ranges of time or cost (that is, “From” a certain date “To” a certain date, and a “Minimum” cash amount to a “Maximum” cash amount). For example, you can print all reports between two dates and include all records that fall between two cost amounts. However, the following tab fields do have different characteristics: Bill Type, Direction, and Organization. In each of these cases, you can select choices from a drop-down list by clicking the down arrow button located to the right of each option line.

5 Once you have entered the filter’s parameters, click **OK** to save them and return to the **Filters** grid dialog box. Notice that the name you entered in the **Filter Name** box appears in this grid.

6 To select this filter, click it once to highlight it, and then click **OK**. This name appears in the **Filter** drop-down menu of the **Reporting** dialog box.

Once the filter is defined, you can select it any time by simply clicking it from the **Filter** drop-down list box in the **Reporting** dialog box.

Select sorting criteria

To select sorting criteria for the reports, perform the following steps.

1 To define a sort order, click the ellipsis button (...) next to the **Sort** drop-down list box. This accesses the **Sort** grid dialog box.

2 In the **Sort** grid dialog box, click **Add**. This accesses the **Sort definition** dialog box.

3 In the **Sort definition** dialog box, enter the following values:

- **Sort Name:** In this box, enter the name of the sorting definition. This appears in the Sorts grid dialog box list and in the Sort drop-down menu of the Reporting dialog box. You can select this sort definition by clicking this name in the Sort drop-down menu of the Reporting dialog box.
- **Description:** In this box, enter any additional descriptive information about this sort definition. This is for informational purposes and also appears in the Sorts grid dialog box.

4 In the **Sort by** box, click the drop-down commands, and then enter the sorting criteria.

5 Once you have entered the sorting criteria, click **OK** to save them and return to the **Sort** grid dialog box. Notice that the name you entered in the **Sort Name** box appears in this grid.

6 To select this definition, click it once to highlight it, and then click **OK**. This name appears in the **Sort** drop-down menu of the **Reporting** dialog box.

Once the sort order is defined, you can select it any time by simply clicking it from the **Sort** drop-down list box in this dialog box.

Schedule reports

If you want to schedule a report to run at a specific time, click **Schedule** from the **Reporting** dialog box. Use the **Scheduler** to enter the date and time that you want to run the report.

Chapter 7
Consolidated Reporting System (CRS)

This chapter provides basic information on setting up and running the CRS. It also includes example procedures and reference information to assist you in setting up the CRS.

Introduction

The CRS is used to generate reports by consolidating data from the TBS and the GCAS. By defining filtering and sorting criteria, you can generate custom reports that detail organizational and employee spending characteristics.

Each report is broken down into subreports that detail user costs for specific applications within OTM. The report is summarized by aggregating all the costs associated with the chargeable entity (that is, the sum of all the subreport totals).

The following is an overview of some of the features of the CRS:

- The CRS allows for effective, fast report generation of all chargeable costs to departments or persons within your organization.
- The CRS combines data from the TBS and GCAS applications detailing products or services purchased, and the appropriate chargeable entity. Management can then effectively monitor and isolate specific costs to various business lines within your organization.
- You can quickly use this information to determine how organizational entities are utilizing corporate funds and resources.
- The user-friendly Tree View interface allows for quick, easy, and effective generation of your reports.
- The Report Engine prints professional-looking reports using TrueType fonts and customizable report logos.

Using CRS

This section contains a brief overview of the CRS's main window interface. For complete details on each of the functions within the main window, refer to the online Help.

Interface

The CRS's main window is the interface for generating consolidated reports.

In the main window you can:

- Select a report
- Define filters and sorts (optional)
- Define an output method
- Schedule or execute a report

By simply clicking on the desired report in the Tree View and defining report settings, you can generate reports easily and quickly. For a sample of the CRS main window, see Figure 56 on page 242.

The main window has the following menu commands:

- **File**
- **Help**

File menu

The **File** menu contains the **Print**, **Schedule**, and **Exit** commands. To access these functions, click **File** from the main window, and then select the desired command.

Print

Click **Print** command to immediately launch your report.

Schedule

Click **Schedule** command to define a time and date when you want to launch the report.

Exit

Click **Exit** command to exit from the CRS program.

Help menu

The Help menu offers commands which provide you with assistance as you use the CRS.

This menu contains the following commands:

- Help Topics
- About the CRS

Getting started

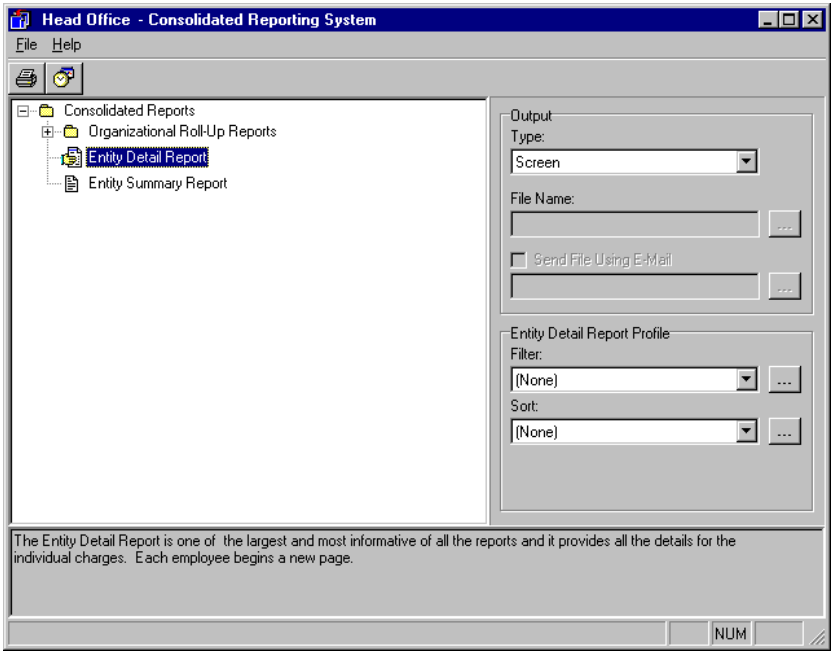
This section describes how to access and use the CRS. Before using the CRS, you must install and configure it as part of OTM. You must then assign it to a site and system. Refer to *Optivity Telephony Manager: Installation and Configuration* (553-3001-230) for complete details on installing this application and assigning it to a site and system.

System access

After you have assigned the CRS to a site and system, you can then run it to generate your reports.

To access the CRS from the **OTM Navigator**, click the desired site and system, and then click **CRS** from the **Telemanagement** menu. The main **CRS** window appears. Figure 56 on page 242 is an example of this window:

Figure 56 CRS main window



Operating procedures

The remaining sections in this chapter outline the operational procedures of the CRS. The following topics are discussed:

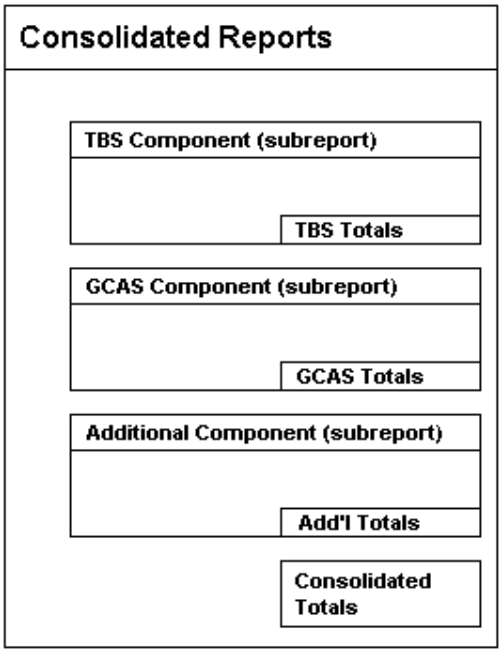
- Consolidated reports
- Report generation (filters, sort definitions, output, printing, and scheduling)

Consolidated reports

The CRS allows you to generate the following consolidated reports. See Figure 57 on page 243:

- Organizational Roll-Up Reports
- Entity Detail Report
- Entity Summary Report

Figure 57 Consolidated report structure



Organizational Roll-up Reports

Organizational Roll-up Reports consolidate organizational billing information (for example, corporate, divisional, and departmental). The Organizational Roll-Up Reports folder contains a report for each level in your organizational hierarchy (for example, Corporation Roll-Up Report, Division Roll-Up Report, and Department Roll-Up Report).

These reports provide a grouping of information based on the organizational level identified in the report name. For example, the Departmental Summary Report provides a grouping of information by department (for example, a report for Sales, Accounts, Administration, Engineering, and so on). The Engineering grouping displays a summary of all chargeable items incurred by any entity, person, or organizational unit immediately attached to the Engineering node, such as the Engineering Manager, the Quality Assurance Team, and the Research and Development Team. The latter two are roll-ups of the chargeable items of their respective members.

Entity Detail Report

The Entity Detail Report consolidates the costs for the different entities (for example, employees, external parties, or roles and projects) from each of the supported OTM applications. By consolidating information in this manner, you can quickly and effectively determine entity costs.

This report details a listing of individual billing costs within each OTM application for each entity. The entity's chargeable records for each application are listed under separate headings called subreports (for example, TBS and GCAS). Each of these subreports contains a detailed listing and a subreport summary of the incurred costs for that application for that entity. These summary costs are then combined to produce a grand total cost/charge for that entity (that is, the sum of all the subreport totals).

Entity Summary Report

The Entity Summary Report is fundamentally the same as the Entity Detail Report. However, unlike that report, the Entity Summary Report provides only a summary of consolidated bills for each entity in the organizational hierarchy.

Generating an Entity Detail Report

To generate an Entity Detail Report, perform the following steps.

Step 1: Select report

1. From the navigator tree in the main window, click **Entity Detail Report**. You can either generate a report that incorporates all entity information from all the OTM applications, or you can define subreports. When you select subreports, it allows you to choose which OTM applications that you want to include in the report, and their order of inclusion. This example includes a subreport.
2. With the **Entity Detail Report** selected, right-click the dialog box, and then click **Select Subreport**.
3. From the **Available Applications** list, select one or more of the available applications that you want to include as subreports (for example, TBS or GCAS). Use the arrow keys next to the **Available Applications** list to move the applications to the **Selected Applications** list. You can then order the chosen applications using the arrow keys next to the **Selected Applications** pane.
4. Click **OK** to accept the settings, or click **Cancel** to return to the main window without changing the previous configuration.

Step 2: Select application-specific filters and sort definitions (optional)

You may also select filter and sort criteria that determine the data ranges that are reported on (optional). These filter and sort options can be applied to each subreport (for example, TBS or GCAS).

1. From the navigator tree view in the main window, click the chosen report's tree view node expander button, and then click the application.
2. To select a current reporting filter or sort option, click the **Filter** or **Sort** drop-down list box, and then select from the list.

3 To add new filters or sorts for this application, click the ellipsis button (…) next to the **Filter** field or **Sort** field. In the **Filter** or **Sort** dialog box, click Add. You now have access to the application's own filter tabs or sort options. Navigate the filter tabs or sort options to define your filtering or sorting criteria.

4 Click **OK** to save the filter or sort options, or click **Cancel** to return to the **Filter** or **Sort** dialog box without saving.

Step 3: Select output device

1 Click the report in the navigator tree view in the main screen. The CRS can send reports to output devices, such as a printer (configured in the operating system), the PC's screen, or to a file.

2 Select an output device from the **Output Type** drop-down list box in the **Output** group box. To output your report to a file, select the appropriate file type from the **Output Type** drop-down list box. Click the ellipsis button (…) to the right of the **File Name** field.

3 From the **Save As** dialog box, select the desired name and location for the output file.

Step 4: Add additional report filters and sort definitions (optional)

In the **Entity Detail Report Profile** group box, select any additional report filters or sort options (optional). These are additional report filter or sort options, and are used over and above application-specific filter or sort options, detailed in step 2.

Step 5: Generate report

Once you have defined your filters, sorts, and output method, you can generate your report.

To generate your report, click **File > Print**, or click the **Printer** icon on the toolbar.

Schedule report

If you want to launch a report to run at a specific date and time, click **File > Schedule**, or click the **Schedule** icon on the toolbar.

Generating an Entity Summary Report

The method of generating an Entity Summary Report is basically the same as generating an Entity Detail Report. Simply select the desired report and follow the same instructions detailed under the section “Generating an Entity Detail Report.”

Generating an Organizational Roll-up Report

The method of generating an Organizational Roll-up Report is basically the same as generating an Entity Detail Report. The only difference is that you select the Organizational Roll-Up Report folder in the navigator tree view, which allows you to choose from a list of report types based on your organizational structure. Simply select the desired report and follow the same instructions detailed under the section “Generating an Entity Detail Report.”

Appendix A: Scripts

Telecom Billing System (TBS) scripts

The following script files are used by the TBS to perform data collection. Select the script file that matches your data collection and processing requirements.

Real-time CDR data collection

The following script files are used for real-time CDR data collection from the Meridian 1; no buffer unit is required:

SL1OLD.COL	Real-time data collection script for Old format CDR.
SL1NEW.COL	Real-time data collection script for New format CDR.

CDR data collection from MDR-2000

The following script file is used for data collection from an MDR-2000 buffer unit:

MDR2000.COL	Data collection script, which collects New format CDR from MDR-2000 to produce normalized CDR (erases contents of buffer). MDR-2000 requires a chip that is compatible with X11 Release 23.

M2KIMG_SL1NEW.COL	Data collection script, which collects New format CDR from MDR-2000 to produce normalized CDR (erases contents of buffer). Use this script to collect B and X type records. The buffer must be set to collect in "image" mode. Refer to the MDR-2000 ISD documentation for more information on setting the buffer to "image" mode. Note that storing records in "image" mode reduces the number of records that can be stored in the buffer unit. Therefore, if your buffer unit is nearing its maximum capacity, you should increase the polling frequency.
M2KIMG_SL1OLD.COL	Data collection script, which collects Old format CDR from MDR-2000 to produce normalized CDR (erases contents of buffer). The buffer must be set to collect in "image" mode. Refer to the MDR-2000 ISD documentation for more information on setting the buffer to "image" mode. Note that storing records in "image" mode will reduce the number of records that can be stored in the buffer unit. Therefore, if your buffer unit is nearing its maximum capacity, you should increase the polling frequency.

CDR data collection from PollCat III and PollNet Netlink

For the PollNet Netlink via FTP collection scripts, POLLNET_FTP_SL1NEW.COL and POLLNET_FTP_SL1OLD.COL, you must access the Data Collection Configuration function, set the Collection Type to Ethernet, and then enter the following information:

- the IP Address of the buffer unit.
- the name of the file from which collection occurs after the IP address value (e.g., 10.12.0.23:PNLAST).

  If a filename is not specified, then PNLAST is used as the default filename.

- the required Login Name and Password.

The following script files are used for data collection from the PollCat III and PollNet Netlink buffer units

POLLSL1NEW.COL	Data collection script, which collects New format CDR from the PollCat III to produce normalized CDR.
POLLSL1OLD.COL	Data collection script, which collects Old format CDR from the PollCat III to produce normalized CDR.
POLLNET-SL1NEW.COL	Data collection script, which collects New format CDR from the PollNet Netlink to produce normalized CDR.
POLLNET-SL1OLD.COL	Data collection script, which collects Old format CDR from the PollNet Netlink to produce normalized CDR.
POLLNET_FTP_SL1NEW.COL	Data collection script, which collects New format CDR from the PollNet Netlink via FTP to produce normalized CDR.
POLLNET_FTP_SL1OLD.COL	Data collection script, which collects Old format CDR from the PollNet Netlink via FTP to produce normalized CDR.

IMPORTANT!

OTM 2.2 does not support Teltronic's Site Event Buffer Enterprise Agent (SEBea) buffer box.

CDR data collection from SEB II

The following script files are used for data collection from the SEB II buffer unit:

SEBSL1NEW.COL	Data collection script, which collects New format CDR from the SEB II to produce normalized CDR.
SEBSL1OLD.COL	Data collection script, which collects Old format CDR from the SEB II to produce normalized CDR.

Sample data collection

The following script file is used to collect CDR data from a sample file. This is used for testing purposes:

SAMPLE.COL	Data collection script, which collects sample CDR data from the sample file in the TBS directory.

Call Tracking scripts

The following script files are used by Call Tracking to perform data collection and real-time monitoring. Certain script files are automatically selected when you enter your configuration parameters in the OTM Site Configuration application. These represent the common scripts for data collection.

For example, if you define SDI1 to have real-time CDR data collection performed from it, then SDI1 is configured to run the real-time CDR data collection scripts SL1.SCR and SL1LOGIN.SCR.

If you collect CDR data from a data file (for example, if you select the File option from the Call Tracking Communications database), then you can select the filename from which you will collect the CDR data, and then select a script filename for that particular format of CDR data. For example, if you select a file for data collection that contains normalized CDR data, then you select the script file COLLECT.SCR.

Real-time CDR data collection

The following script files are used for real-time CDR data collection from the Meridian 1 and Communication Server 1000 systems. No buffer unit is required:

SL1.SCR	Real-time data collection script for Old format CDR.
SL1NEW.SCR	Real-time data collection script for New format CDR.
SL1NEWX.SCR	Real-time data collection script for New format CDR; supports X11 Release 23.
SL1EURO.SCR	Real-time data collection script for New format CDR with Periodic Pulse Metering.

SL1UROX.SCR	Real-time data collection script for “New” format CDR with Periodic Pulse Metering; supports X11 Release 23.
SL1LOGIN.SCR	Functional script used by above-mentioned data collection scripts.

CDR data collection from MDR-2000

The following script files are used for data collection from an MDR-2000 buffer unit:

COLECT.SCR	Data collection script, which collects Old format CDR from MDR-2000 to produce normalized CDR (erases contents of buffer).
COLECTX.SCR	Data collection script, which collects New format CDR from MDR-2000 to produce normalized CDR (erases contents of buffer); MDR-2000 requires a chip that is compatible with X11 Release 23.
2000FD.SCR	Data collection script, which monitors in real-time Old format CDR from an MDR-2000.
2000FDX.SCR	Data collection script, which monitors in real time New format CDR from an MDR-2000; MDR-2000 requires a chip that is compatible with X11 Release 23.

CDR data collection from PollCat II/III

The following script files are used for data collection from the PollCat II/III buffer units:

POLLCDR.SCR	CDR data collection script for PollCat II/III buffer units.
PARSESL1.SCR	Functional script used by POLLCDR.SCR.
POLNEWX.SCR	CDR data collection script for PollCat II/III buffer units; supports X11 Release 23.
NEWCDRX.SCR	Functional script used by POLLNEWX.SCR.

CDR data collection from SEB II

The following script files are used for data collection from the SEB II buffer unit:

SEB.SCR	CDR data collection script for SEB II buffer unit.
PARSESL1.SCR	Functional script used by SEB.SCR script file.
SEBNEWX.SCR	New format CDR data collection script for SEB II buffer unit; supports X11 Release 23.
NEWCDRX.SCR	Functional script used by SEBNEWX.SCR script file.

CDR data collection modem scripts

The following script files are supporting function scripts used by all CDR data collection scripts for Call Tracking. The appropriate script is automatically used when you select Hayes or Custom as the format for the modem for CDR data collection from the OTM Site Configuration application.

If you enter custom modem information when setting up a site, then the custom modem script file is updated with the appropriate parameters:

HAYES.SCR	Functional script used by all CDR data collection scripts in Call Tracking for connection with Hayes-compatible modems.
CUSTOM.SCR	Functional script used by all CDR data collection scripts in Call Tracking for connection with customized modems (updated with correct parameters).

Script usage table

Table 7 lists the types of scripts that are selected for different scenarios for Call Tracking. These represent the main scripts that can be selected to suit a

particular scenario. All other scripts are automatically selected depending on these script selections.

Table 7Script usage table

To	Use
Perform real-time CDR data collection from Meridian 1 and Communication Server 1000 systems	SL1.SCR
Collect CDR from MDR-2000 buffer unit	COLLECT.SCR
Collect CDR from PollCat II/III buffer units	POLLCDR.SCR
Collect CDR from AT1 buffer unit	AT1CDR.SCR
Collect CDR from AT2 buffer unit	AT2CDR.SCR
Collect CDR from SEB II buffer unit	SEB.SCR
Collect Traffic data from SEB II buffer unit	SEBTRAF.SCR
Collect CDR from Sentinel 2000 buffer unit	SNLCDR.SCR

Appendix B: Sample reports

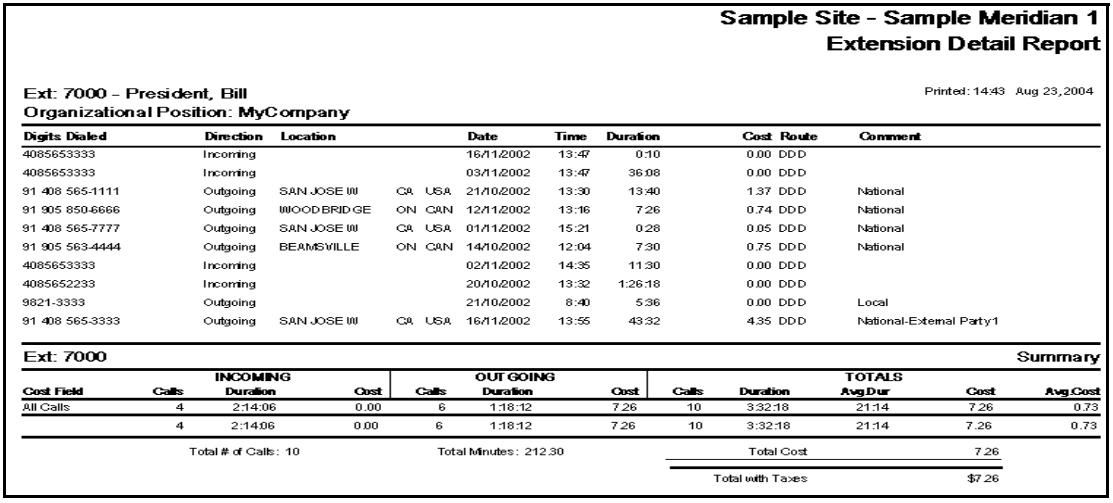
Telecom Billing System (TBS) provides detailed reports that give you specific information about the telephone system's usage and costs that are associated with the entities in your organization. By providing statistics on your system, they help you assess the effectiveness of your telephone services.

Cost Analysis reports

Extension Detail report

The Extension Detail Report (see Figure 58) provides a detailed listing of calls and summary totals for each extension. If an external parties phone number matches the digits dialed, the external parties name will be displayed in the comments field. If a match between the digits dialed and an external parties phone number does not exist, the comment field will contain the call type.

Figure 58 Extension Detail report



Sample Site - Sample Meridian 1
Extension Detail Report

Ext: 7000 - President, Bill
Organizational Position: MyCompany

Printed: 14:43 Aug 23, 2004

Digits Dialed	Direction	Location			Date	Time	Duration	Cost	Route	Comment
4085653333	Incoming				16/11/2002	13:47	0:10	0.00	DDD	
4085653333	Incoming				03/11/2002	13:47	36:08	0.00	DDD	
91 408 565-1111	Outgoing	SAN JOSE IW	CA	USA	21/10/2002	13:30	13:40	1.37	DDD	National
91 905 850-6666	Outgoing	WOODBRIDGE	ON	CAN	12/11/2002	13:16	7:26	0.74	DDD	National
91 408 565-7777	Outgoing	SAN JOSE IW	CA	USA	01/11/2002	15:21	0:28	0.05	DDD	National
91 905 563-4444	Outgoing	BEAMSVILLE	ON	CAN	14/10/2002	12:04	7:30	0.75	DDD	National
4085653333	Incoming				02/11/2002	14:35	11:30	0.00	DDD	
4085652233	Incoming				20/10/2002	13:32	1:26:18	0.00	DDD	
9821-3333	Outgoing				21/10/2002	8:40	5:36	0.00	DDD	Local
91 408 565-3333	Outgoing	SAN JOSE IW	CA	USA	16/11/2002	13:55	43:32	4.35	DDD	National-External Party1

Ext: 7000 Summary

	INCOMING			OUTGOING			TOTALS				
Cost Field	Calls	Duration	Cost	Calls	Duration	Cost	Calls	Duration	Avg Dur	Cost	Avg Cost
All Calls	4	2:14:06	0.00	6	1:18:12	7.26	10	3:32:18	21:14	7.26	0.73
	4	2:14:06	0.00	6	1:18:12	7.26	10	3:32:18	21:14	7.26	0.73

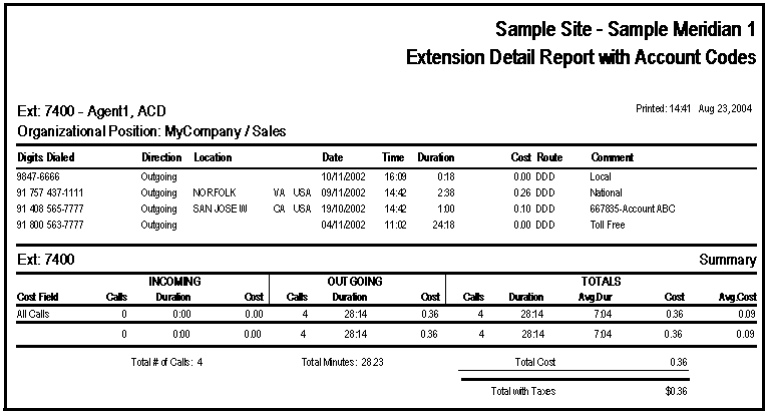
Total # of Calls: 10 Total Minutes: 212.30 Total Cost 7.26

Total with Taxes $7.26

Extension Detail report with Account Codes

The Extension Detail report with Account Codes (see Figure 59) shows all the calls made from a particular extension. If an account code is used to make a call, this report shows the account code used and the owner of that account code in the comments field. If an account code is not used, the comments field shows the call type, for example, Local. Similar to the Extension Detail report, this report includes such information as digits dialed, location, and the call date, time, and duration. Each extension begins a new page on the report. The Extension Detail report with Account Codes report is based on the Extension Detail report.

Figure 59 Extension Detail report with Account Codes



Sample Site - Sample Meridian 1
Extension Detail Report with Account Codes

Ext: 7400 - Agent1, ACD
Organizational Position: MyCompany / Sales

Printed: 14:41 Aug 23, 2004

Digits Dialed	Direction	Location		Date	Time	Duration	Cost	Route	Comment
9847-6666	Outgoing			10/11/2002	16:09	0:18	0.00	DDD	Local
91 757 437-1111	Outgoing	NORFOLK	VA USA	09/11/2002	14:42	2:38	0.26	DDD	National
91 408 565-7777	Outgoing	SAN JOSE MI	CA USA	19/10/2002	14:42	1:00	0.10	DDD	667835-Account ABC
91 800 563-7777	Outgoing			04/11/2002	11:02	24:18	0.00	DDD	Toll Free

Ext: 7400 Summary

	INCOMING			OUT GOING			TOTALS				
Cost Field	Calls	Duration	Cost	Calls	Duration	Cost	Calls	Duration	Avg Dur	Cost	Avg Cost
All Calls	0	0:00	0.00	4	28:14	0.36	4	28:14	7:04	0.36	0.09
	0	0:00	0.00	4	28:14	0.36	4	28:14	7:04	0.36	0.09

Total # of Calls: 4 Total Minutes: 28:23 Total Cost 0.36

Total with Taxes $0.36

Exceptional Chronological report

The Exception/Chronological report (see Figure 60) provides a detailed listing of calls that match the specified filter criteria. It is particularly useful for identifying "exception" calls, such as calls that have been made to particular phone numbers or whose cost has exceeded a specific threshold.

Figure 60 Exception/Chronological report

Sample Site - Sample System
Exception/Chronological Report

Printed: 17:21 Sep 30, 2002

Extension	Directio	Digits Dialed	Location			Date	Time	Duration	Cost	Route	Comment
7001	Incoming	905 827-2222				10/14/2002	10:12	2:16	0.00	DDD	
7501	Incoming	416 364-9999				10/14/2002	10:55	5:30	0.00	DDD	
7504	Outgoing	416 777-2222				10/14/2002	11:36	6:46	0.00	DDD	Local
7504	Outgoing	011 33164767777	FRANCE		INT	10/14/2002	11:44	1:36	0.40	DDD	International
7000	Outgoing	1 905 563-4444	BEAMSVILLE	ON	CAN	10/14/2002	12:04	7:30	0.75	DDD	National
7003	Outgoing	829-8888				10/14/2002	12:42	0:52	0.00	DDD	Local
7002	Outgoing	1 402 894-3333	OMAHA	NE	USA	10/14/2002	12:16	30:42	3.07	DDD	National
7503	Outgoing	1 800 769-5555				10/14/2002	14:19	0:36	0.00	DDD	Toll Free
7505	Outgoing	0				10/14/2002	15:11	2:02	0.00	DDD	Other
7505	Outgoing	011 35391733333	IRELAND		INT	10/14/2002	15:13	0:06	0.03	DDD	International
7002	Outgoing	1 615 344-6666	NASHVILLE	TN	USA	10/14/2002	15:34	10:42	1.07	DDD	National
7500	Outgoing	1 403 201-0000	CALGARY	AB	CAN	10/14/2002	17:11	1:44	0.17	DDD	National
7505	Outgoing	011 35391733333	IRELAND		INT	10/15/2002	9:06	4:42	1.18	DDD	International
7504	Outgoing	011 441714400000	UNITED-KNGDM		INT	10/15/2002	9:44	1:58	0.49	DDD	International
7001	Outgoing	1 306 825-5555	LOYDMINSTR	SK	CAN	10/15/2002	13:09	15:32	1.55	DDD	National
7500	Outgoing	1 408 565-7777	SAN JOSE W	CA	USA	10/15/2002	14:40	2:48	0.28	DDD	National
7001	Outgoing	416 777-2222				10/15/2002	16:27	0:06	0.00	DDD	Local

Exception/Chronological Report Summary

	INCOMING			OUTGOING			TOTALS			
Cost Field	Calls	Duration	Cost	Calls	Duration	Cost	Calls	Duration	Avg.Dur	Cost	Avg.Cost
All Calls	86	8:29:29	0.00	12	1:51:42	0.75	98	10:21:11	6:20	0.75	0.01
International	0	0:00	0.00	8	15:32	3.89	8	15:32	1:57	3.89	0.49
Local	0	0:00	0.00	46	4:37:47	0.00	46	4:37:47	6:02	0.00	0.00
National	0	0:00	0.00	39	9:54:16	59.41	39	9:54:16	15:14	59.41	1.52
	86	8:29:29	0.00	105	16:39:17	64.05	191	25:08:46	7:54	64.05	0.34

Total # of Calls: 191 Total Minutes: 1508.77 Total Cost 64.05

Entity Detail report

The Entity Detail report (see Figure 61) is similar to the Extension Detail report and provides a detailed listing of calls and summary information for each user, (Employee, External Party, or Role/Project) entered in the system. Outgoing, incoming, and internal calls are assigned to each user based on the extension the call was placed from. Tandem calls can also be assigned to a user based on the trunk numbers on the call. If the trunks fall within one of the trunk ranges assigned to a user in the Corporate Directories, the call will appear on that user's report.

Figure 61 Entity Detail report

Sample Site – Sample System
Entity Detail Report

Printed: 17:34 Sep 30, 2002

Herberger, Jack
Organizational Position: Global Knowledge \ Richardson \ Design
Ext: 2003

Digits Dialed	Direction	Location			Date	Time	Duration	Cost	Route	Comment
1 212 601-5203	Outgoing	NEW YORK	NY	USA	12/1/2002	9:03	0:08	0.19	DDD	LD
1 717 234-5678	Outgoing	HARRISBURG	PA	USA	12/1/2002	9:04	0:50	0.19	DDD	LD
1 212 601-0734	Outgoing	NEW YORK	NY	USA	12/1/2002	9:04	0:06	0.19	DDD	LD
1 616 402-3730	Outgoing	GRANDHAVEN	MI	USA	12/1/2002	9:07	0:18	0.19	DDD	LD
1 212 560-1520	Outgoing	NEW YORK	NY	USA	12/1/2002	9:07	0:08	0.19	DDD	LD
834-5300	Outgoing	GRANDPRARI	TX	USA	12/1/2002	8:57	7:18	0.00		Local
Totals for Ext: 2003						Calls: 10	13:58	4.95		

Herberger, Jack **Summary**

	INCOMING			OUTGOING			TOTALS				
Cost Field	Calls	Duration	Cost	Calls	Duration	Cost	Calls	Duration	Avg.Dur	Cost	Avg.Cost
800 Service	4	5:10	4.00	0	0:00	0.00	4	5:10	1:18	4.00	1.00
Long Distance	0	0:00	0.00	5	1:30	0.95	5	1:30	0:18	0.95	0.19
Unassigned	0	0:00	0.00	1	7:18	0.00	1	7:18	7:18	0.00	0.00
	4	5:10	4.00	6	8:48	0.95	10	13:58	1:24	4.95	0.50

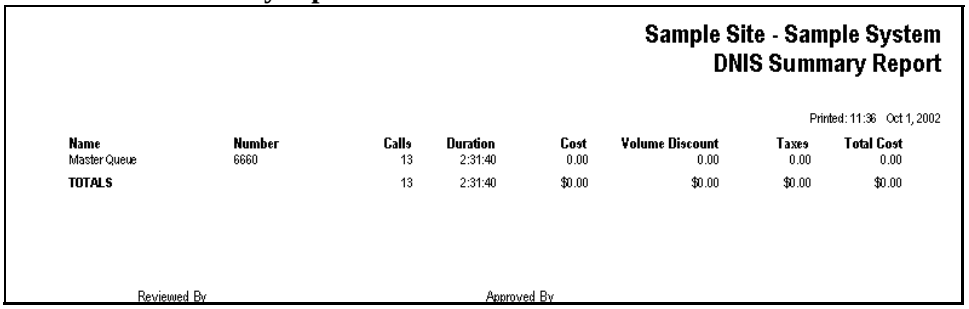
Total # of Calls: 10 Total Minutes: 13.97 Total Cost 4.95

Total with Taxes $4.95

DNIS Summary Report

The DNIS Summary report (see Figure 62) is intended as a summary of the DNIS Detail report. It provides the number of calls made to each DNIS number and the total duration and cost of those calls.

Figure 62 DNIS Summary report



Sample Site - Sample System
DNIS Summary Report

Printed: 11:36 Oct 1, 2002

Name	Number	Calls	Duration	Cost	Volume Discount	Taxes	Total Cost
Master Queue	6660	13	2:31:40	0.00	0.00	0.00	0.00
TOTALS		13	2:31:40	$0.00	$0.00	$0.00	$0.00

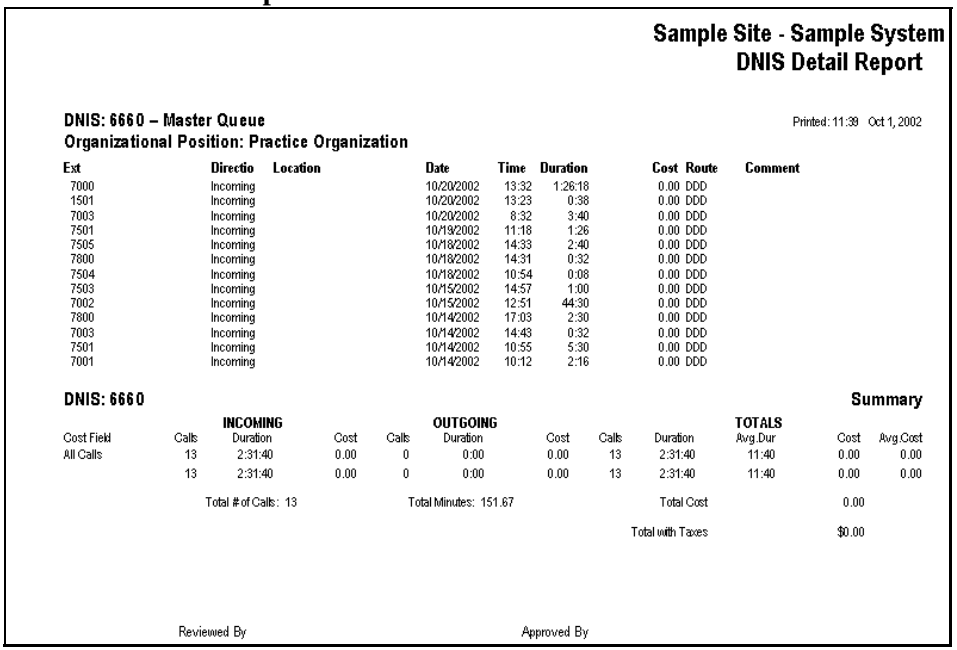
Reviewed By

Approved By

DNIS Detail report

The DNIS Detail report (see Figure 63) provides details for each DNIS number used individually. It lists each call made to that number, which extension handled the call, the date, time, duration, and cost. If CLID information is available on the call, it will also display the location from which the call was made.

Figure 63 DNIS Detail report



Sample Site - Sample System
DNIS Detail Report

DNIS: 6660 – Master Queue
Organizational Position: Practice Organization

Printed: 11:39 Oct 1, 2002

Ext	Directio	Location	Date	Time	Duration	Cost	Route	Comment
7000	Incoming		10/20/2002	13:32	1:26:18	0.00	DDD	
1501	Incoming		10/20/2002	13:23	0:38	0.00	DDD	
7003	Incoming		10/20/2002	8:32	3:40	0.00	DDD	
7501	Incoming		10/19/2002	11:18	1:26	0.00	DDD	
7505	Incoming		10/18/2002	14:33	2:40	0.00	DDD	
7800	Incoming		10/18/2002	14:31	0:32	0.00	DDD	
7504	Incoming		10/18/2002	10:54	0:08	0.00	DDD	
7503	Incoming		10/15/2002	14:57	1:00	0.00	DDD	
7002	Incoming		10/15/2002	12:51	44:30	0.00	DDD	
7800	Incoming		10/14/2002	17:03	2:30	0.00	DDD	
7003	Incoming		10/14/2002	14:43	0:32	0.00	DDD	
7501	Incoming		10/14/2002	10:55	5:30	0.00	DDD	
7001	Incoming		10/14/2002	10:12	2:16	0.00	DDD	

DNIS: 6660 **Summary**

	INCOMING			OUTGOING			TOTALS			
Cost Field	Calls	Duration	Cost	Calls	Duration	Cost	Calls	Duration	Avg.Dur	Cost	Avg.Cost
All Calls	13	2:31:40	0.00	0	0:00	0.00	13	2:31:40	11:40	0.00	0.00
	13	2:31:40	0.00	0	0:00	0.00	13	2:31:40	11:40	0.00	0.00

Total # of Calls: 13 Total Minutes: 151.67 Total Cost 0.00

Total with Taxes $0.00

Reviewed By Approved By

Auxiliary ID Detail report

The Auxiliary ID Detail report (see Figure 64) provides a detailed listing of calls and summary information for each Auxiliary ID or Extension user, (Employee, External Party, or Role/Project). Calls having an Auxiliary ID are charged back using the Auxiliary ID on the call, while calls with no Auxiliary ID are charged back using the extension on the call.

Figure 64 Auxiliary ID Detail report

Sample Site - Sample System
Auxiliary ID Detail Report

Printed: 12:19 Oct 1, 2002

Herberger, Jack
Organizational Position: Global Knowledge \ Richardson \ Design

Extension	Directio	Digits Dialed	Location			Date	Time	Duration	Cost	Route	Comment
2003	Outgoing	1 717 234-5678	HARRISBURG	PA	USA	12/1/2002	9:04	0:50	0.19	DDD	LD
2003	Outgoing	834-5300	GRANDPRARI	TX	USA	12/1/2002	8:57	7:18	0.00		Local
2003	Outgoing	1 212 601-0734	NEW YORK	NY	USA	12/1/2002	9:04	0:06	0.19	DDD	LD
2003	Outgoing	1 212 601-5203	NEW YORK	NY	USA	12/1/2002	9:03	0:08	0.19	DDD	LD
2003	Incoming					12/1/2002	9:04	2:26	1.00	800	
2003	Incoming					12/1/2002	9:07	0:02	1.00	800	
2003	Incoming					12/1/2002	9:03	2:10	1.00	800	
2003	Outgoing	1 616 402-3730	GRANDHAVEN	MI	USA	12/1/2002	9:07	0:18	0.19	DDD	LD
2003	Outgoing	1 212 560-1520	NEW YORK	NY	USA	12/1/2002	9:07	0:08	0.19	DDD	LD
2003	Incoming					12/1/2002	9:05	0:32	1.00	800	

Herberger, Jack **Summary**

	INCOMING			OUTGOING			TOTALS				
Cost Field	Calls	Duration	Cost	Calls	Duration	Cost	Calls	Duration	Avg.Dur	Cost	Avg.Cost
	0	0:00	0.00	1	7:18	0.00	1	7:18	7:18	0.00	0.00
800 Service	4	5:10	4.00	0	0:00	0.00	4	5:10	1:18	4.00	1.00
Long Distance	0	0:00	0.00	5	1:30	0.95	5	1:30	0:18	0.95	0.19
	4	5:10	4.00	6	8:48	0.95	10	13:58	1:24	4.95	0.50

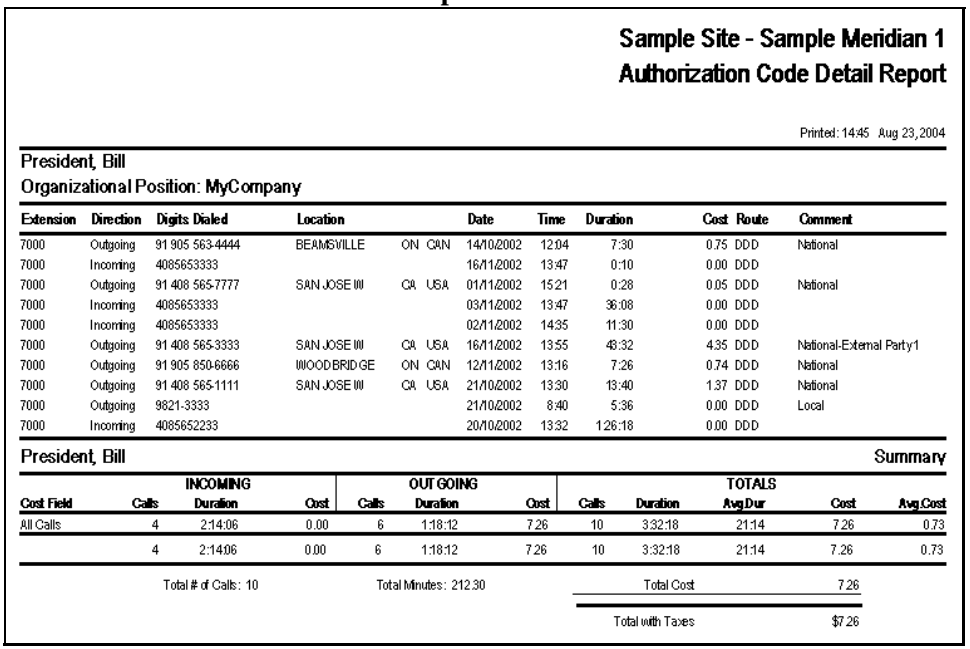
Total # of Calls: 10 Total Minutes: 13.97 Total Cost 4.95

Total with Taxes $4.95

Authorization Code Detail

The Authorization Code Detail report (see Figure 65) provides a detailed listing of calls and summary information for each authorizatoin code user (Employee, External Party, or Role/Project). Calls having no authorization code or an authorization code which is not assigned to another user are charged back using the extension on the call. If an external parties phone number matches the digits dialed, the external parties name will be displayed in the comments field. If a match between the digits dialed and an external parties phone number does not exist, the comment field will contain the call type.

Figure 65 Authorization Code Detail report



Sample Site - Sample Meridian 1
Authorization Code Detail Report

Printed: 14:45 Aug 23, 2004

President, Bill
Organizational Position: MyCompany

Extension	Direction	Digits Dialed	Location		Date	Time	Duration	Cost	Route	Comment
7000	Outgoing	91 905 563-4444	BEAMSVILLE	ON CAN	14/10/2002	12:04	7:30	0.75	DDD	National
7000	Incoming	4085653333			16/11/2002	13:47	0:10	0.00	DDD	
7000	Outgoing	91 408 565-7777	SAN JOSE IN	CA USA	01/11/2002	15:21	0:28	0.05	DDD	National
7000	Incoming	4085653333			03/11/2002	13:47	36:08	0.00	DDD	
7000	Incoming	4085653333			02/11/2002	14:35	11:30	0.00	DDD	
7000	Outgoing	91 408 565-3333	SAN JOSE IN	CA USA	16/11/2002	13:55	48:32	4.35	DDD	National-External Party1
7000	Outgoing	91 905 850-6666	WOODBRIDGE	ON CAN	12/11/2002	13:16	7:26	0.74	DDD	National
7000	Outgoing	91 408 565-1111	SAN JOSE IN	CA USA	21/10/2002	13:30	13:40	1.37	DDD	National
7000	Outgoing	9821-3333			21/10/2002	8:40	5:36	0.00	DDD	Local
7000	Incoming	4085652233			20/10/2002	13:32	1:26:18	0.00	DDD	

President, Bill — Summary

	INCOMING			OUTGOING			TOTALS				
Cost Field	Calls	Duration	Cost	Calls	Duration	Cost	Calls	Duration	Avg Dur	Cost	Avg Cost
All Calls	4	2:14:06	0.00	6	1:18:12	7.26	10	3:32:18	21:14	7.26	0.73
	4	2:14:06	0.00	6	1:18:12	7.26	10	3:32:18	21:14	7.26	0.73

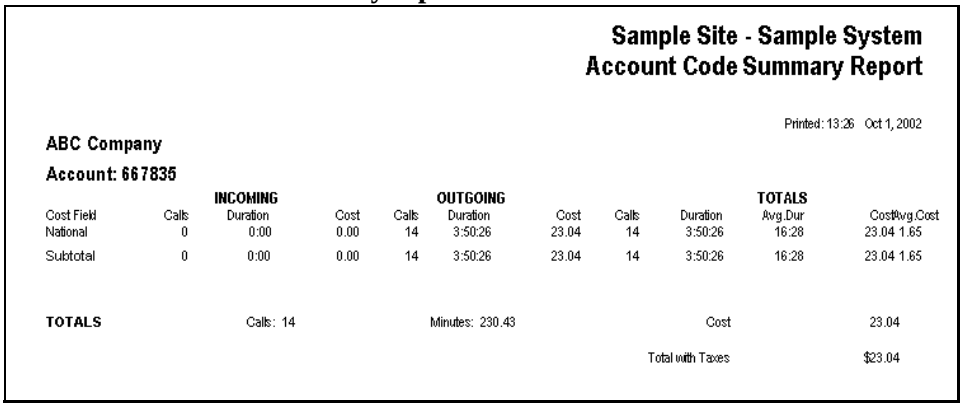
Total # of Calls: 10 Total Minutes: 212.30 Total Cost 7.26

Total with Taxes $7.26

Account Code Summary

The Account Code Summary report (see Figure 66) provides a summary of calling statistics and call charges for each account code used on calls within the system.

Figure 66 Account Code Summary report



Sample Site - Sample System
Account Code Summary Report

Printed: 13:26 Oct 1, 2002

ABC Company

Account: 667835

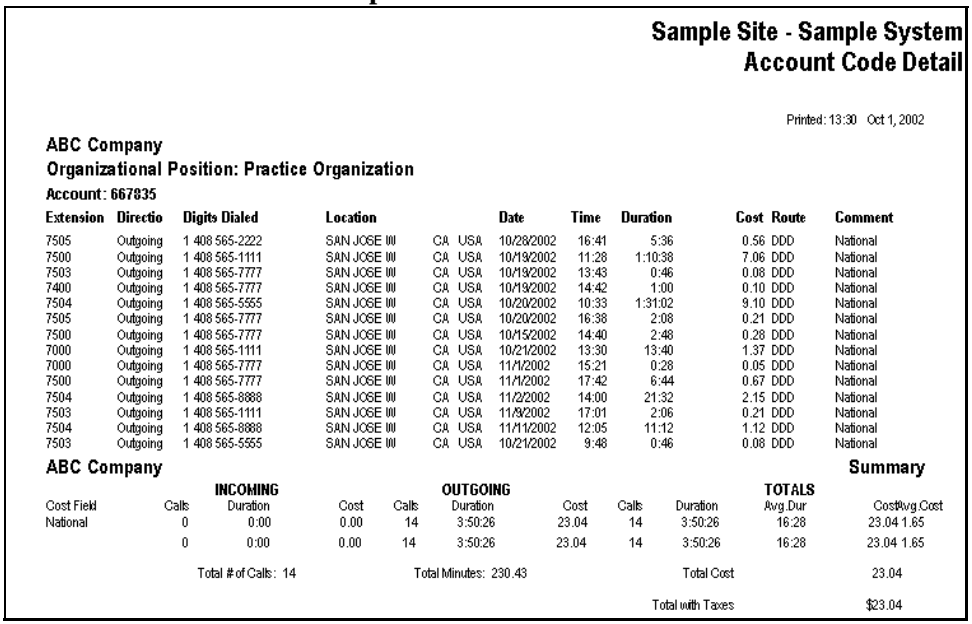
	INCOMING			OUTGOING			TOTALS			
Cost Field	Calls	Duration	Cost	Calls	Duration	Cost	Calls	Duration	Avg.Dur	Cost/Avg.Cost
National	0	0:00	0.00	14	3:50:26	23.04	14	3:50:26	16:28	23.04 1.65
Subtotal	0	0:00	0.00	14	3:50:26	23.04	14	3:50:26	16:28	23.04 1.65

TOTALS	Calls: 14	Minutes: 230.43	Cost	23.04
			Total with Taxes	$23.04

Account Code Detail

The Account Code Detail report (see Figure 67) provides a detailed listing of calls and summary information for each user, (Employee, External Party, or Role/Project), that has one or more account codes assigned to them. Calls which do not have an account code are not included on the report.

Figure 67 Account Code Detail report



Sample Site - Sample System
Account Code Detail

Printed: 13:30 Oct 1, 2002

ABC Company
Organizational Position: Practice Organization
Account: 667835

Extension	Directio	Digits Dialed	Location			Date	Time	Duration	Cost	Route	Comment
7505	Outgoing	1 408 565-2222	SAN JOSE WI	CA	USA	10/28/2002	16:41	5:36	0.56	DDD	National
7500	Outgoing	1 408 565-1111	SAN JOSE WI	CA	USA	10/19/2002	11:28	1:10:38	7.06	DDD	National
7503	Outgoing	1 408 565-7777	SAN JOSE WI	CA	USA	10/19/2002	13:43	0:46	0.08	DDD	National
7400	Outgoing	1 408 565-7777	SAN JOSE WI	CA	USA	10/19/2002	14:42	1:00	0.10	DDD	National
7504	Outgoing	1 408 565-5555	SAN JOSE WI	CA	USA	10/20/2002	10:33	1:31:02	9.10	DDD	National
7505	Outgoing	1 408 565-7777	SAN JOSE WI	CA	USA	10/20/2002	16:38	2:08	0.21	DDD	National
7500	Outgoing	1 408 565-7777	SAN JOSE WI	CA	USA	10/15/2002	14:40	2:48	0.28	DDD	National
7000	Outgoing	1 408 565-1111	SAN JOSE WI	CA	USA	10/21/2002	13:30	13:40	1.37	DDD	National
7000	Outgoing	1 408 565-7777	SAN JOSE WI	CA	USA	11/1/2002	15:21	0:28	0.05	DDD	National
7500	Outgoing	1 408 565-7777	SAN JOSE WI	CA	USA	11/1/2002	17:42	6:44	0.67	DDD	National
7504	Outgoing	1 408 565-8888	SAN JOSE WI	CA	USA	11/2/2002	14:00	21:32	2.15	DDD	National
7503	Outgoing	1 408 565-1111	SAN JOSE WI	CA	USA	11/9/2002	17:01	2:06	0.21	DDD	National
7504	Outgoing	1 408 565-8888	SAN JOSE WI	CA	USA	11/11/2002	12:05	11:12	1.12	DDD	National
7503	Outgoing	1 408 565-5555	SAN JOSE WI	CA	USA	10/21/2002	9:48	0:46	0.08	DDD	National

ABC Company **Summary**

	INCOMING			OUTGOING			TOTALS			
Cost Field	Calls	Duration	Cost	Calls	Duration	Cost	Calls	Duration	Avg.Dur	Cost/Avg.Cost
National	0	0:00	0.00	14	3:50:26	23.04	14	3:50:26	16:28	23.04 1.65
	0	0:00	0.00	14	3:50:26	23.04	14	3:50:26	16:28	23.04 1.65

Total # of Calls: 14 Total Minutes: 230.43 Total Cost 23.04

Total with Taxes $23.04

Account Code Detail with Employees

The Account Code Detail with Employees report (see Figure 68) shows details on calls made with your company's assigned account codes. It displays all of the calls made using a particular account code. Each call includes the extension from which the call was made along with the extension's owner. Calls that do not have an account code are not included in this report. Similar to the Account Code Detail report, this report includes such information as the extension number, employee name, digits dialed, and the call date, time, duration, and cost. This report is based on the Account Code Detail report.

Figure 68 Account Code Detail with Employees report

Sample Site - Sample Meridian 1
Account Code Detail with Employees

Printed: 14:41 Aug 23, 2004

Account ABC
Organizational Position: MyCompany

Account: 667835

Extension	Employee Name	Direction	Digits Dialed	Location			Date	Time	Duration	Cost	Route
7505	Harris, George	Outgoing	91 408 565-2222	SAN JOSE WI	CA	USA	28/10/2002	16:41	5:36	0.56	DDD
7500	Jones, Paul	Outgoing	91 408 565-1111	SAN JOSE WI	CA	USA	19/10/2002	11:28	1:10:38	7.06	DDD
7503	Audet, Franco	Outgoing	91 408 565-7777	SAN JOSE WI	CA	USA	19/10/2002	13:43	0:46	0.08	DDD
7400	Agent1, ACD	Outgoing	91 408 565-7777	SAN JOSE WI	CA	USA	19/10/2002	14:42	1:00	0.10	DDD
7504	Room, Conference	Outgoing	91 408 565-5555	SAN JOSE WI	CA	USA	20/10/2002	10:33	1:31:02	9.10	DDD
7505	Harris, George	Outgoing	91 408 565-7777	SAN JOSE WI	CA	USA	20/10/2002	16:38	2:08	0.21	DDD
7500	Jones, Paul	Outgoing	91 408 565-7777	SAN JOSE WI	CA	USA	15/10/2002	14:40	2:48	0.28	DDD
7000	President, Bill	Outgoing	91 408 565-1111	SAN JOSE WI	CA	USA	21/10/2002	13:30	13:40	1.37	DDD
7000	President, Bill	Outgoing	91 408 565-7777	SAN JOSE WI	CA	USA	01/11/2002	15:21	0:28	0.05	DDD
7500	Jones, Paul	Outgoing	91 408 565-7777	SAN JOSE WI	CA	USA	01/11/2002	17:42	6:44	0.67	DDD
7504	Room, Conference	Outgoing	91 408 565-8888	SAN JOSE WI	CA	USA	02/11/2002	14:00	21:32	2.15	DDD
7503	Audet, Franco	Outgoing	91 408 565-1111	SAN JOSE WI	CA	USA	09/11/2002	17:01	2:06	0.21	DDD
7504	Room, Conference	Outgoing	91 408 565-8888	SAN JOSE WI	CA	USA	11/11/2002	12:05	11:12	1.12	DDD
7503	Audet, Franco	Outgoing	91 408 565-5555	SAN JOSE WI	CA	USA	21/10/2002	9:48	0:46	0.08	DDD

Account ABC — Summary

	INCOMING			OUTGOING			TOTALS				
Cost Field	Calls	Duration	Cost	Calls	Duration	Cost	Calls	Duration	Avg Dur	Cost	Avg Cost
All Calls	0	0:00	0.00	14	3:50:26	23.04	14	3:50:26	16:28	23.04	1.65
	0	0:00	0.00	14	3:50:26	23.04	14	3:50:26	16:28	23.04	1.65

Total # of Calls: 14 Total Minutes: 230.43 Total Cost 23.04

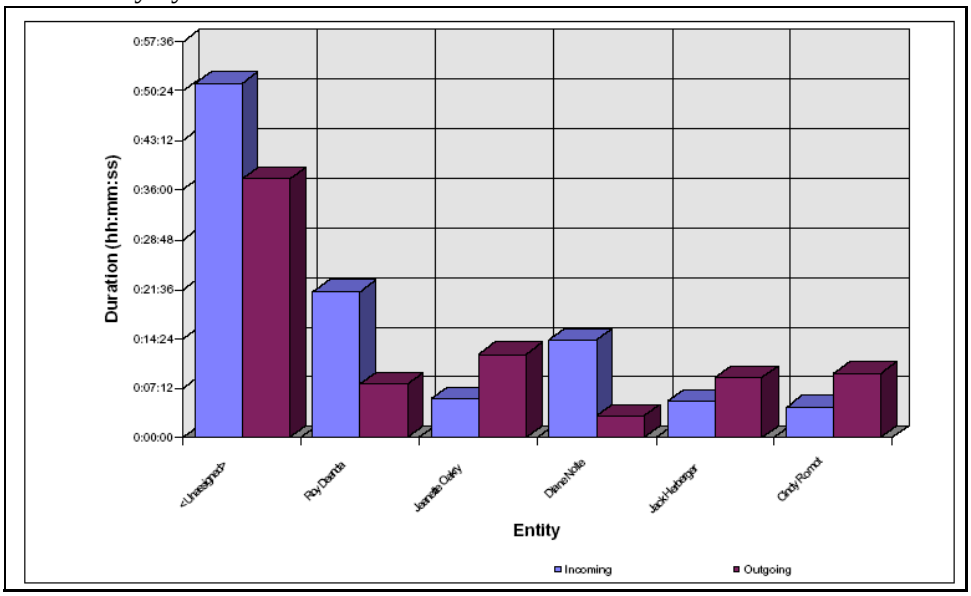
Total with Taxes $23.04

Entity Summary Graphs

Entity by Duration

The Entity by Duration graph (see Figure 69) displays the duration of calls per entity.

Figure 69 Entity by Duration



Organizational Roll-Up Summary Graphs (Calls, Costs, and Duration)

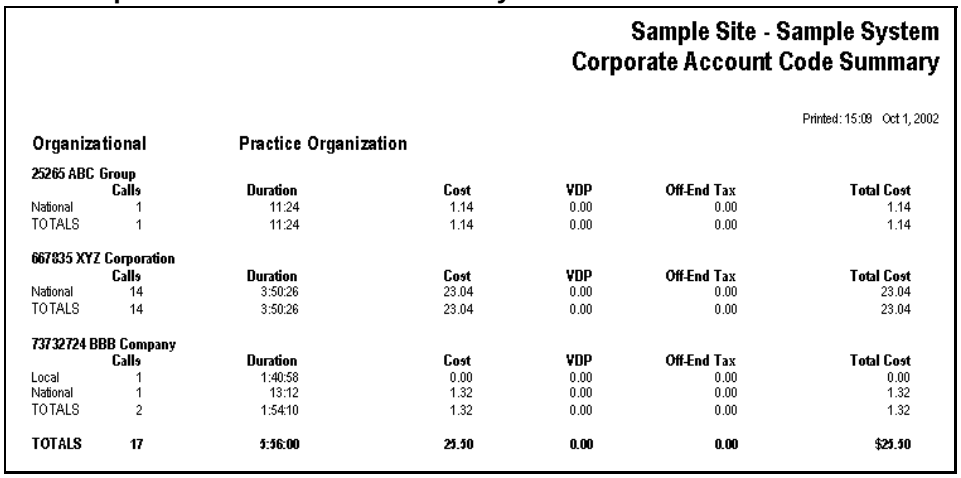
- Corporate Summary by Calls
- Cost Center Summary by Costs
- Department Summary by Duration

Account Code Roll-up Summary

Corporate Summary report

The Account Code Rollup Summary report (see Figure 70) provides a summary of telephone usage rolled up to each Organizational Unit at the selected level in the Organizational Hierarchy. Calls are allocated to a unit based on the users, (Employees, External Parties and Projects) assigned to that unit and its sub-units. A user is responsible for all calls having an account code that is assigned to them. Calls that do not have an account code are not included on the report. Figure 70 is an example of the Corporate Level Rollup Report.

Figure 70 Corporate Account Code Summary



Sample Site - Sample System
Corporate Account Code Summary

Printed: 15:09 Oct 1, 2002

Organizational **Practice Organization**

25265 ABC Group

	Calls	Duration	Cost	VDP	Off-End Tax	Total Cost
National	1	11:24	1.14	0.00	0.00	1.14
TOTALS	1	11:24	1.14	0.00	0.00	1.14

667835 XYZ Corporation

	Calls	Duration	Cost	VDP	Off-End Tax	Total Cost
National	14	3:50:26	23.04	0.00	0.00	23.04
TOTALS	14	3:50:26	23.04	0.00	0.00	23.04

73732724 BBB Company

	Calls	Duration	Cost	VDP	Off-End Tax	Total Cost
Local	1	1:40:58	0.00	0.00	0.00	0.00
National	1	13:12	1.32	0.00	0.00	1.32
TOTALS	2	1:54:10	1.32	0.00	0.00	1.32

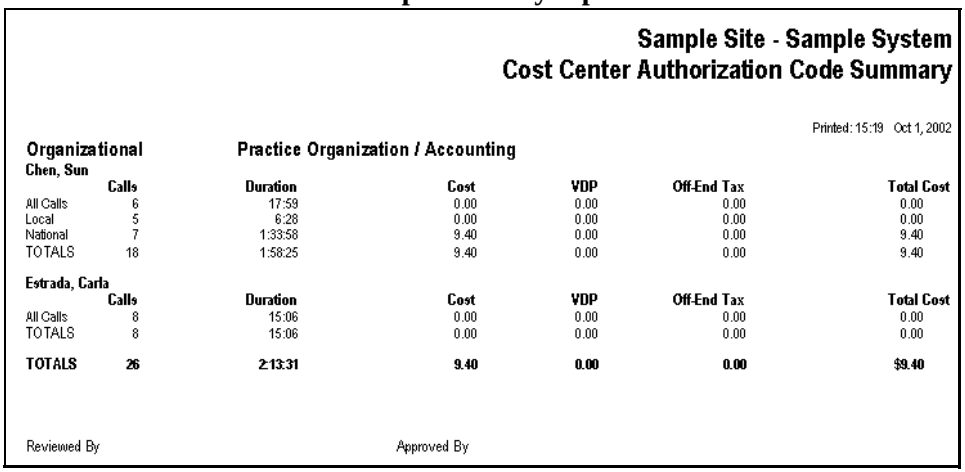
TOTALS	**17**	**5:36:00**	**25.50**	**0.00**	**0.00**	**$25.50**

Authorization Code Roll-up Summary

Cost Center Summary report

This Authorization Code Rollup Summary report (see Figure 71) provides a summary of telephone usage rolled up to each Organizational Unit at the selected level in the Organizational Hierarchy. Calls are allocated to a unit based on the users, (Employees, External Parties, and Projects) assigned to that unit and its sub-units. Users are responsible for all calls made with their authorization code and also any calls made from any one of their primary extensions, when the authorization code on the call is either non-existent or not assigned to another user.

Figure 71 Authorization Code Rollup Summary report



Sample Site - Sample System
Cost Center Authorization Code Summary

Printed: 15:19 Oct 1, 2002

Organizational **Practice Organization / Accounting**

Chen, Sun

	Calls	Duration	Cost	VDP	Off-End Tax	Total Cost
All Calls	6	17:59	0.00	0.00	0.00	0.00
Local	5	6:28	0.00	0.00	0.00	0.00
National	7	1:33:58	9.40	0.00	0.00	9.40
TOTALS	18	1:58:25	9.40	0.00	0.00	9.40

Estrada, Carla

	Calls	Duration	Cost	VDP	Off-End Tax	Total Cost
All Calls	8	15:06	0.00	0.00	0.00	0.00
TOTALS	8	15:06	0.00	0.00	0.00	0.00

TOTALS	**26**	**2:13:31**	**9.40**	**0.00**	**0.00**	**$9.40**

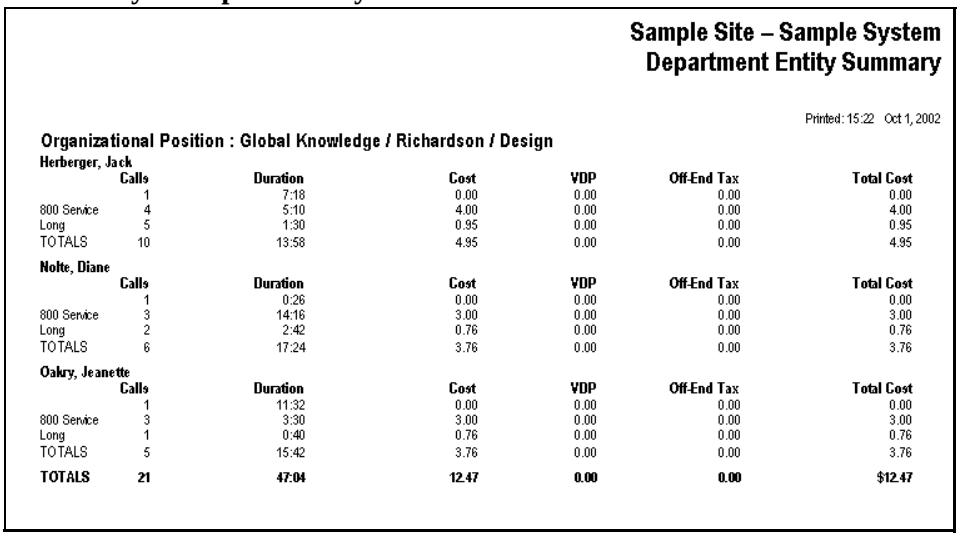
Reviewed By Approved By

Entity Roll-up Summary

Department Summary report

This Entity Rollup Summary report (see Figure 72) provides a summary of telephone usage rolled up to each Organizational Unit at the selected level in the Organizational Hierarchy. Calls are allocated to a unit based on the users, (Employees, External Parties, and Projects) assigned to that unit and its sub-units. A user is responsible for all normal calls made from any one of their primary extensions as well as those tandem calls which utilize a trunk that falls within a range of trunks assigned to those users.

Figure 72 Entity Rollup Summary



Sample Site – Sample System
Department Entity Summary

Printed: 15:22 Oct 1, 2002

Organizational Position : Global Knowledge / Richardson / Design

Herberger, Jack

	Calls	Duration	Cost	VDP	Off-End Tax	Total Cost
	1	7:18	0.00	0.00	0.00	0.00
800 Service	4	5:10	4.00	0.00	0.00	4.00
Long	5	1:30	0.95	0.00	0.00	0.95
TOTALS	10	13:58	4.95	0.00	0.00	4.95

Nolte, Diane

	Calls	Duration	Cost	VDP	Off-End Tax	Total Cost
	1	0:26	0.00	0.00	0.00	0.00
800 Service	3	14:16	3.00	0.00	0.00	3.00
Long	2	2:42	0.76	0.00	0.00	0.76
TOTALS	6	17:24	3.76	0.00	0.00	3.76

Oakry, Jeanette

	Calls	Duration	Cost	VDP	Off-End Tax	Total Cost
	1	11:32	0.00	0.00	0.00	0.00
800 Service	3	3:30	3.00	0.00	0.00	3.00
Long	1	0:40	0.76	0.00	0.00	0.76
TOTALS	5	15:42	3.76	0.00	0.00	3.76

TOTALS	**21**	**47:04**	**12.47**	**0.00**	**0.00**	**$12.47**

Extension Roll-up Summary

Corporate Summary report

The Extension Rollup Summary report (see Figure 73) provides a summary of telephone usage rolled up to each Organizational Unit at the selected level in the Organizational Hierarchy. Calls are allocated to a unit based on the users, (Employees, External Parties, and Projects), assigned to that unit and its sub-units. A user is responsible for all calls made from any one of their primary extensions.

Figure 73 Extension Rollup Summary

Sample Site - Sample System
Department Extension Summary

Printed: 15:27 Oct 1, 2002

Organizational Position: Practice Organization / Marketing / Marketing North America

7505 Harris, George

	Calls	Duration	Cost	VDP	Total Cost
All Calls	9	25:56	0.00	0.00	0.00
International	2	4:48	1.21	0.00	1.21
Local	4	19:12	0.00	0.00	0.00
National	3	13:48	1.38	0.00	1.38
TOTALS	18	1:03:44	2.59	0.00	2.59
TOTALS	**18**	**1:03:44**	**2.59**	**0.00**	**$2.59**

Reviewed By Approved By

Grand Totals

Calls	Duration	Cost	VDP	Total Cost
18	**1:03:44**	**2.59**	**0.00**	**$2.59**

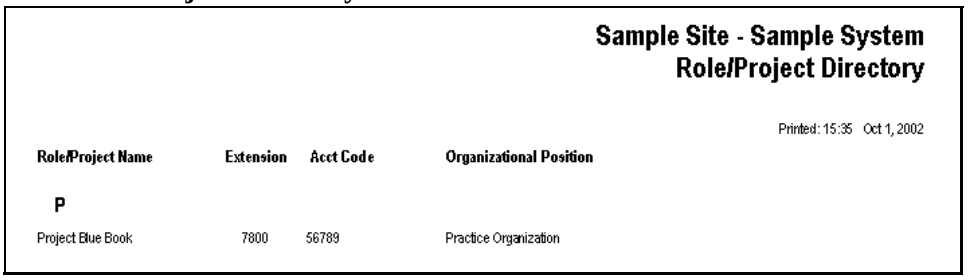
Department Extension Summary

Directory Information

Role/Project Directory

The Role/Project Directory report (see Figure 74) lists the roles and projects that are entered in the Roles and Projects Directory. In addition to listing their names, the report also includes their extensions, account code, and organizational unit to which they are assigned.

Figure 74 Role/Project Directory



Sample Site - Sample System
Role/Project Directory

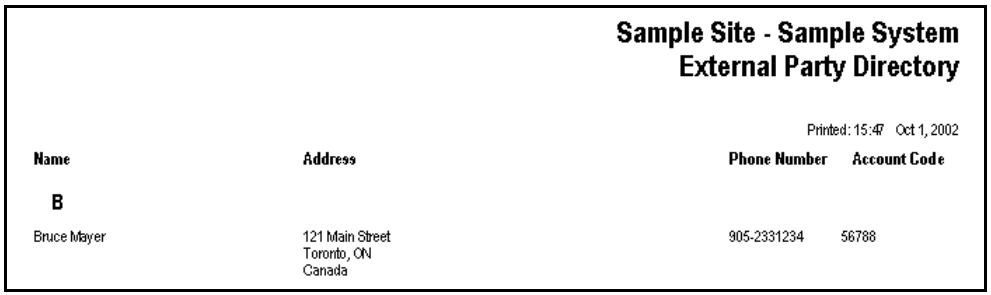
Printed: 15:35 Oct 1, 2002

Role/Project Name	Extension	Acct Code	Organizational Position
P			
Project Blue Book	7800	56789	Practice Organization

External Party Directory

The External Party Directory report (see Figure 75) lists the external parties that are entered in the External Parties Directory. In addition to listing their names, the report also includes their addresses, account codes and phone numbers.

Figure 75 External Party Directory



Sample Site - Sample System
External Party Directory

Printed: 15:47 Oct 1, 2002

Name	Address	Phone Number	Account Code
B			
Bruce Mayer	121 Main Street Toronto, ON Canada	905-2331234	56788

Employee Directory (Ordered by Organizational unit)

The Employee Directory report provides an alphabetic listing of the employees within their assigned Organizational Units. In addition to listing their names, the report also includes their extension(s) and job titles.

Employee Directory

The Employee Directory report provides an alphabetic listing of the employees entered in the Employee Directory. In addition to listing their names, the report also includes their extension(s), job titles and the organizational unit to which they are assigned.

Frequency

Undispersed Verification

The Undisbursed Verification report (see Figure 76) provides a detailed listing of calls that have no account code assigned to them. The calls on the report are grouped by the extension from which the calls were placed. Once this report has been printed, it can be used as a reference for assigning account codes back to these calls using the Call Database Editor.Unanswered Call Detail.

Figure 76 Undisbursed Verification report

Sample Site – Sample System
Employee Directory

Printed: 16:22 Oct 1, 2002

Name	Extension	Organizational Position	Job Title
D			
Deanda, Roy	2004	Global Knowledge \ Richardson \ Training	Training Senior Manager
H			
Herberger, Jack	2003	Global Knowledge \ Richardson \ Design	Technical Instructor
M			
Marshall, Linda	2006	Global Knowledge \ Richardson \ Training	Training Senior Manager
N			
Nolte, Diane	2001	Global Knowledge \ Richardson \ Design	Sales
O			
Oakry, Jeanette	2000	Global Knowledge \ Richardson \ Design	Sales
Ovalle, Hector	2005	Global Knowledge \ Richardson \ Training	Manager
R			
Romot, Cindy	2002	Global Knowledge \ Richardson \ Training	Technical Instructor

Location Summary

The Location Summary report summarizes calling patterns by call location. The report includes the total count, duration, and cost of calls that are made to each location.

Hold Time Detail

The Hold Time Detail report provides a detailed listing of calls, including the amount of time the call was placed on hold. This report can be used to provide details of any unusually long calls appearing on the Hold Time Summary Report. Hold-time information is not available in the CDR of all phone systems. If this is the case for your phone switch, the Hold Time Report does not display any data.

Frequently Called Numbers

The Frequently Called Numbers report summarizes calling patterns by digits dialed for outgoing calls and Calling Line Id for incoming calls. The report includes the number of times a phone number was dialed as well as the total duration and cost of the calls to that number.

External Party Summary

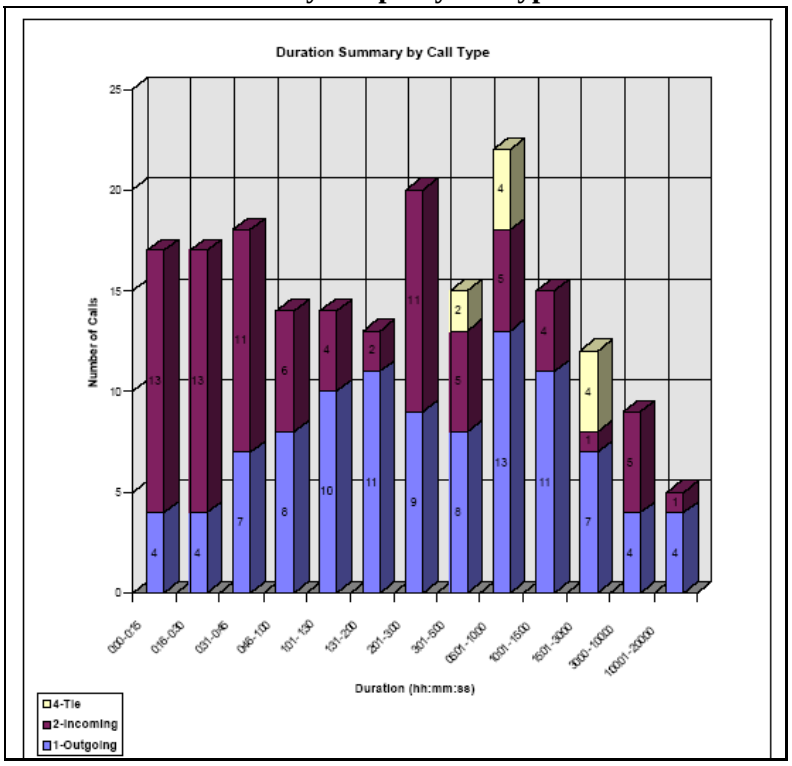
The External Party Summary report provides a detailed listing of calls that were made to external parties listed in the External Party Directory. Calls are assigned to an External Party when their phone number(s) match the digits dialed in the call records.

Duration Summary

Duration Summary Graph by Call Type

The Duration Summary Graph by call type (see Figure 77) displays the number and duration of calls by call type.

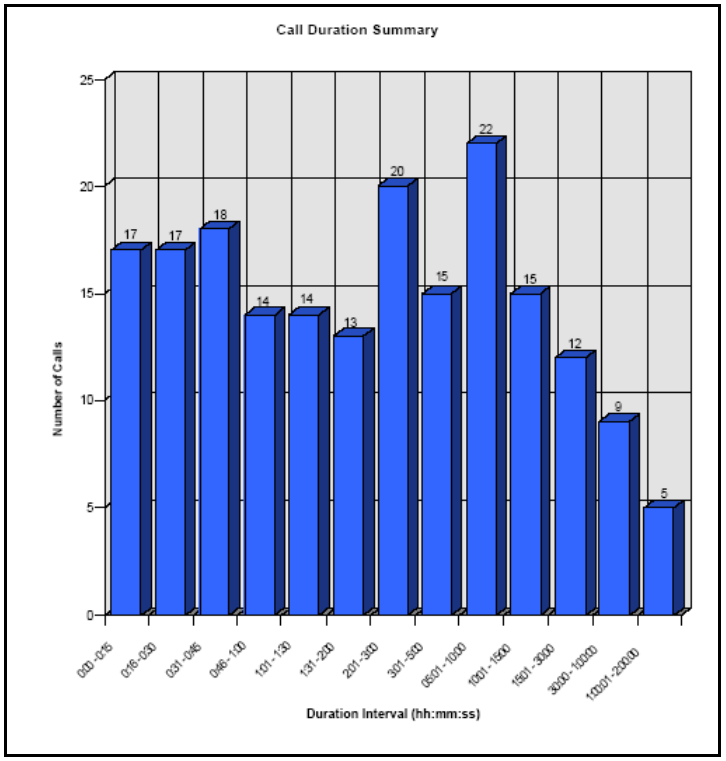
Figure 77 Duration Summary Graph by call type



Duration Summary Graph

The Duration Summary Graph (see Figure 78) displays the duration of calls by DN.

Figure 78 Call Duration



Digits Detail

The Digits Detail report provides a detailed listing of calls and summary totals for each phone number dialed.

Calling Area Summary

The Calling Area Summary report summarizes calling patterns by NPA-NXX/dial code and location. The report includes the total count, duration, and cost of calls that are made to each of the NPA-NXX/dial code and location combinations.

Area Code

Area Code Summary

The Area Code Summary report summarizes calling patterns by area code. The report includes the total count, duration, and cost of calls that are made to each area code.

Area Code Location Summary

The Area Code Location Summary report summarizes calling patterns by area code and calling location. The report includes the total count, duration, and cost of calls that are made to each area code and location.

Area Code Summary Graphs (Available for Calls, Costs, and Duration)

The Area Code Summary graphs summarizes calling patterns by area code. The graphs display each for total count, duration, and cost of calls that are made to each area code.

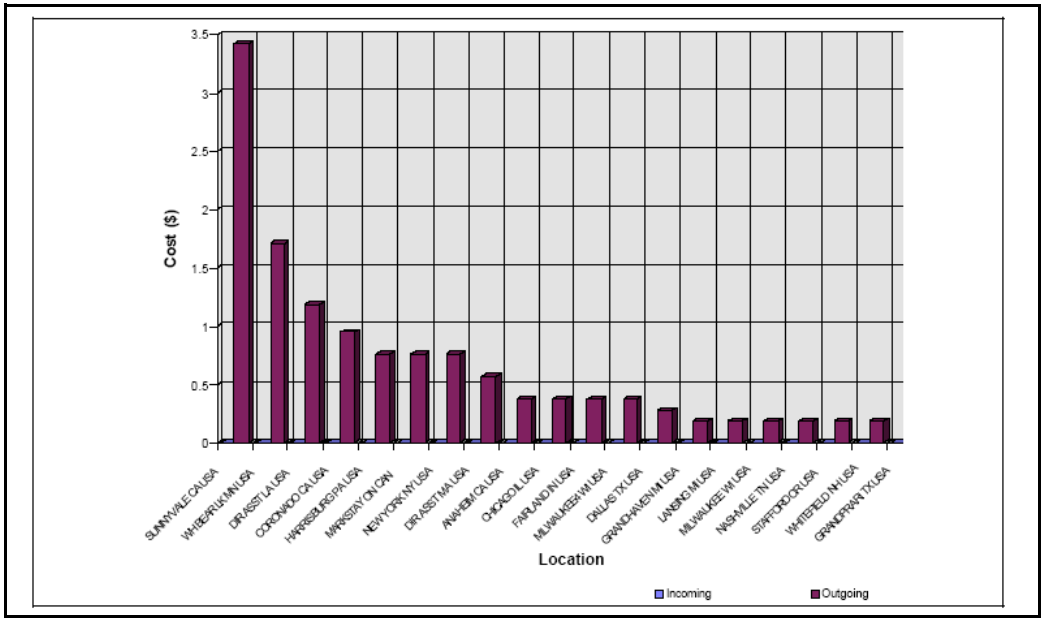
Location Summary

Location Summary Graphs (Available for Calls, Costs, and Duration)

Location by Cost

The Location by cost summary graph (see Figure 79 on page 281) displays the costs of incoming/outgoing calls per location.

Figure 79 Location by cost summaryt



Surcharge

Exception/Chronological Surcharge Report

The Exception/Chronological Surcharge report provides a detailed listing of calls that match the specified filter criteria, and includes a breakdown of the total call cost into Cost, Surcharge, and Total Cost amounts. It is particularly useful for identifying "exception" calls, such as calls that have been made to particular phone numbers or whose cost has exceeded a specific threshold. This profit version of the Exception/Chronological report provides a breakdown of the total call cost into Cost, Surcharge, and Total Cost amounts.

Entity Surcharge

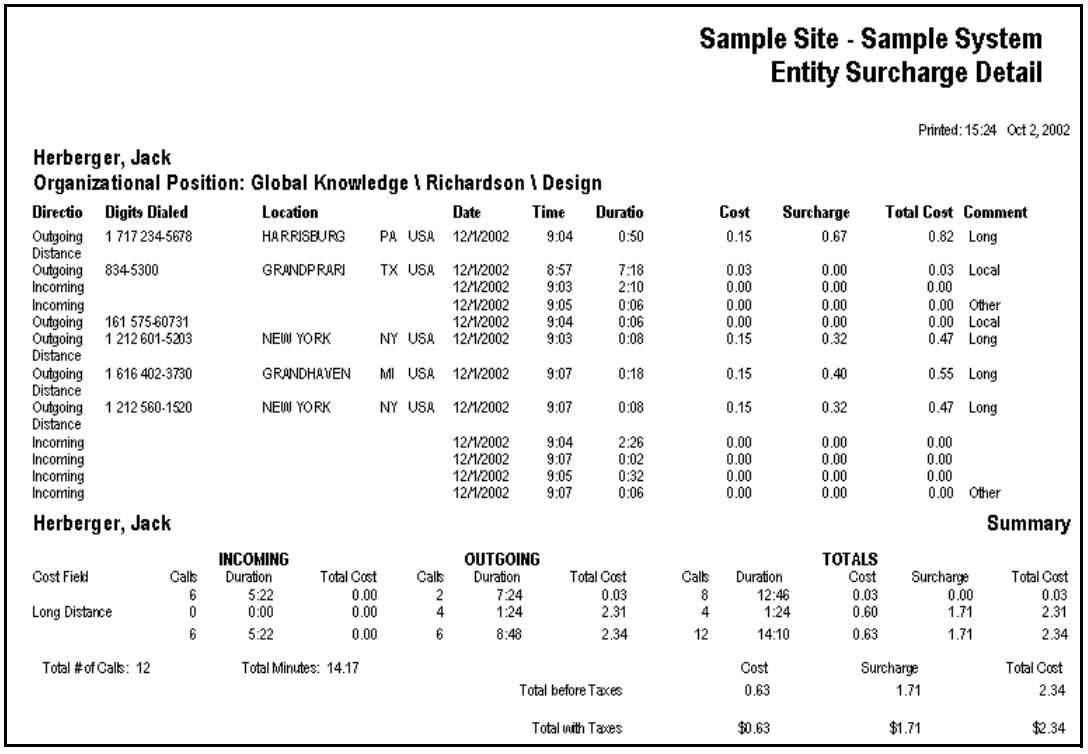
Entity Surcharge Summary

The Entity Surcharge Summary report sums up information on calls by Entity (Employee, External Party, Role/Project). The Entity value assigned to each call is based first on the Authorization Code associated with it - for example the Authorization Code's Primary Entity. For calls without an associated Authorization Code, the Entity value assigned is the Billable Extension's Primary Entity. Tandem calls can also be assigned to an Entity based on the trunk numbers on the call. If the trunks fall within one of the trunk ranges assigned to an Entity in the Corporate Directories, the call appears within that Entity's data.

Entity Surcharge Detail

The Entity Surcharge Detail report (see Figure 80 on page 283) provides a detailed listing of calls and summary information including a breakdown of the total call cost into Cost, Surcharge and Total Cost amounts for each authorization code user/Entity (Employee, External Party or Role/Project). Outgoing, incoming and internal calls are assigned to each Entity based on the authorization code used to place the call. Calls that have either no authorization code or an unassigned authorization code are charged back using the extension on the call. Tandem Calls can also be assigned to an Entity based on the trunk numbers on the call. If the trunks fall within one of the trunk ranges assigned to an Entity in the Corporate Directories, the call will appear on that Entity's report.

Figure 80 Entity Surcharge Detail report



Sample Site - Sample System
Entity Surcharge Detail

Printed: 15:24 Oct 2, 2002

Herberger, Jack
Organizational Position: Global Knowledge \ Richardson \ Design

Directio	Digits Dialed	Location			Date	Time	Duratio	Cost	Surcharge	Total Cost	Comment
Outgoing Distance	1 717 234-5678	HARRISBURG	PA	USA	12/1/2002	9:04	0:50	0.15	0.67	0.82	Long
Outgoing	834-5300	GRANDPRARI	TX	USA	12/1/2002	8:57	7:18	0.03	0.00	0.03	Local
Incoming					12/1/2002	9:03	2:10	0.00	0.00	0.00	
Incoming					12/1/2002	9:05	0:06	0.00	0.00	0.00	Other
Outgoing	161 575-60731				12/1/2002	9:04	0:06	0.00	0.00	0.00	Local
Outgoing	1 212 601-5203	NEW YORK	NY	USA	12/1/2002	9:03	0:08	0.15	0.32	0.47	Long
Outgoing Distance	1 616 402-3730	GRANDHAVEN	MI	USA	12/1/2002	9:07	0:18	0.15	0.40	0.55	Long
Outgoing Distance	1 212 560-1520	NEW YORK	NY	USA	12/1/2002	9:07	0:08	0.15	0.32	0.47	Long
Incoming					12/1/2002	9:04	2:26	0.00	0.00	0.00	
Incoming					12/1/2002	9:07	0:02	0.00	0.00	0.00	
Incoming					12/1/2002	9:05	0:32	0.00	0.00	0.00	
Incoming					12/1/2002	9:07	0:06	0.00	0.00	0.00	Other

Herberger, Jack **Summary**

	INCOMING			OUTGOING			TOTALS				
Cost Field	Calls	Duration	Total Cost	Calls	Duration	Total Cost	Calls	Duration	Cost	Surcharge	Total Cost
	6	5:22	0.00	2	7:24	0.03	8	12:46	0.03	0.00	0.03
Long Distance	0	0:00	0.00	4	1:24	2.31	4	1:24	0.60	1.71	2.31
	6	5:22	0.00	6	8:48	2.34	12	14:10	0.63	1.71	2.34

Total # of Calls: 12 Total Minutes: 14.17

	Cost	Surcharge	Total Cost
Total before Taxes	0.63	1.71	2.34
Total with Taxes	$0.63	$1.71	$2.34

Entity Surcharge Roll-up Summary

Department Summary Report

This Entity Surcharge Rollup Summary report provides a summary of telephone usage rolled up to each Organizational Unit at the selected level in the Organizational Hierarchy, and includes a breakdown of total call cost into Cost, Surcharge, and Total Cost amounts. Calls are allocated to a unit based on the Entities (Employees, External Parties, and Projects) assigned to that unit and its sub-units. An Entity is responsible for all calls made with their authorization code and also any calls made from any one of their primary extensions when an authorization code on the call is either non-existent or not assigned to another Entity. Tandem Calls can also be assigned to an Entity based on the trunk numbers on the call. If the trunks fall within one of the

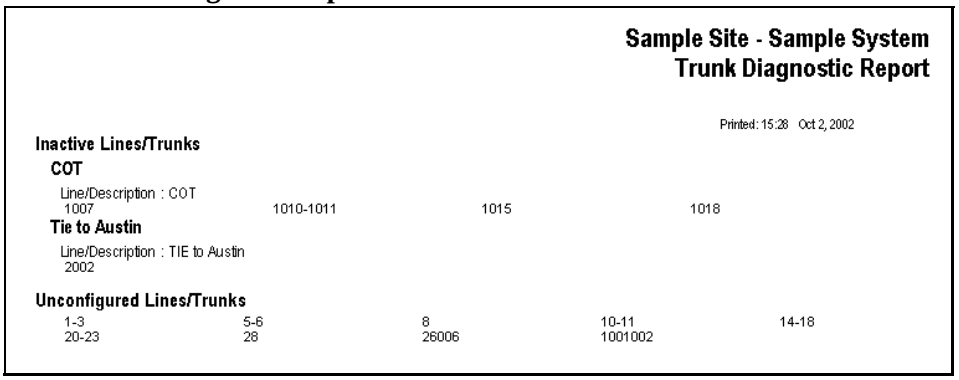
trunk ranges assigned to an Entity in the Corporate Directories, the call appears within that Entity 's data.

Utility Tools

Trunk Diagnostic report

The Trunk Diagnostic report (see Figure 81) compares trunk ranges you have entered in the Telephone Configuration with the trunks that have actual call activity. The report lists all of the trunks that are entered in the Telephone Configuration but have no call activity as well as all of the trunks that have call activity but have not been entered in the Telephone Configuration's data.

Figure 81 Trunk Diagnostic report



Sample Site - Sample System
Trunk Diagnostic Report

Printed: 15:28 Oct 2, 2002

Inactive Lines/Trunks

COT

Line/Description : COT

1007	1010-1011	1015	1018

Tie to Austin

Line/Description : TIE to Austin

2002

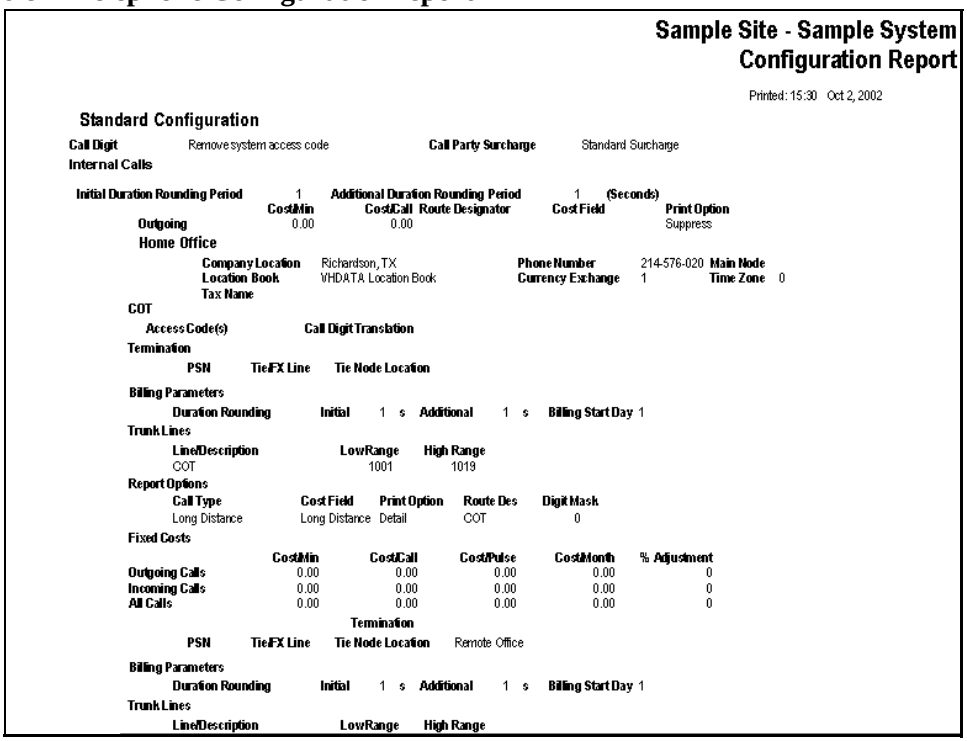
Unconfigured Lines/Trunks

1-3	5-6	8	10-11	14-18
20-23	28	26006	1001002	

Telephone Configuration report

The Telephone Configuration report (see Figure 82) displays the system configuration and rating information entered in the Telephone Configuration. It can be used to review the cost configuration for each of the services defined in the Telephone Configuration editor.

Figure 82 Telephone Configuration report



Sample Site - Sample System Configuration Report

Printed: 15:30 Oct 2, 2002

Standard Configuration

Call Digit Remove system access code **Call Party Surcharge** Standard Surcharge

Internal Calls

Initial Duration Rounding Period 1 **Additional Duration Rounding Period** 1 **(Seconds)**

	Cost/Min	Cost/Call	Route Designator	Cost Field	Print Option
Outgoing	0.00	0.00			Suppress

Home Office

Company Location Richardson, TX **Phone Number** 214-576-020 **Main Node**
Location Book VHDATA Location Book **Currency Exchange** 1 **Time Zone** 0
Tax Name

COT

Access Code(s) **Call Digit Translation**

Termination

PSN **Tie/FX Line** **Tie Node Location**

Billing Parameters

Duration Rounding **Initial** 1 s **Additional** 1 s **Billing Start Day** 1

Trunk Lines

Line/Description	Low Range	High Range
COT	1001	1019

Report Options

Call Type	Cost Field	Print Option	Route Des	Digit Mask
Long Distance	Long Distance	Detail	COT	0

Fixed Costs

	Cost/Min	Cost/Call	Cost/Pulse	Cost/Month	% Adjustment
Outgoing Calls	0.00	0.00	0.00	0.00	0
Incoming Calls	0.00	0.00	0.00	0.00	0
All Calls	0.00	0.00	0.00	0.00	0

Termination

PSN **Tie/FX Line** **Tie Node Location** Remote Office

Billing Parameters

Duration Rounding **Initial** 1 s **Additional** 1 s **Billing Start Day** 1

Trunk Lines

Line/Description	Low Range	High Range

System Configuration

The System Configuration report (see Figure 83) displays the configuration parameters that indicate how the Telecom Billing System should process, collect, and transmit call data. Information is also provided about the various alarms and alarm thresholds configured in the system.

Figure 83 System Configuration report

Sample Site - Sample System
System Configuration

SYSTEM

Call Data Options

No Options Selected

COLLECTION

Connection

Type	File Name
File	G:\Common Data\Training\Home Office\detail1.img

Scripts

Login Name	Collection Script
Unassigned	G:\Millennium\RootData\Scripts\sl1old.col

TRANSMISSION

Connection

Type
Direct

Port Settings

Port	Baud	Data Bits	Parity	Stop Bits
COM2	2400	8	None	1

Record Posting

Record Format

Selected Fields	Data Type	Field Width	Justify	Format	Sample Value
Date	Date	15.0	Left	MM/dd/yyyy	12/31/1999
Duration	Duration	10.0	Right		0
Originating Extension/Trunk	String	10.0	Left		456
Terminating Extension/Trunk	String	10.0	Left		678
Time	Time	15.0	Left	HH:mm:ss	23:59:59
Total Tax Amount	Currency	10.2	Right		0

Interface Protocol

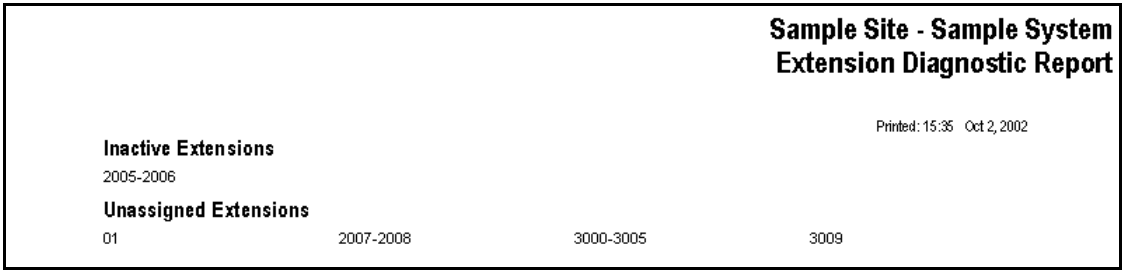
Protocol Name
ASCII

Extension Diagnostic report

The Extension Diagnostic report (see Figure 84) compares the extensions assigned to users (Employees, External Parties, Roles/Projects) in the Corporate Directories with the extensions that have actual call activity. The

report lists all of the extensions that are listed in the Directories but have no call activity as well as all of the extensions that have call activity but have not been assigned to a user in the Directories.system.

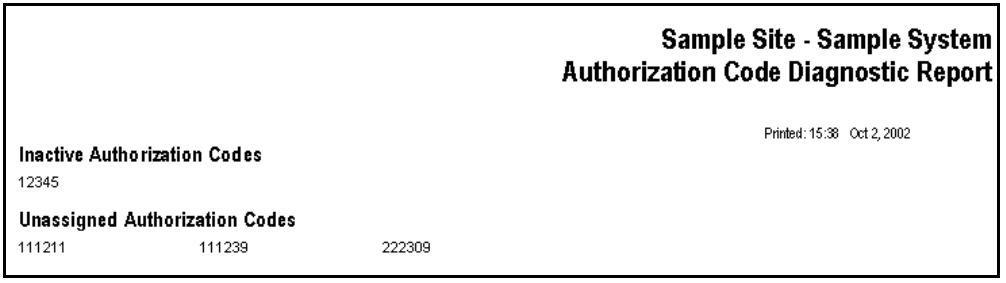
Figure 84 Extension Diagnostic report



Authorization Code Diagnostic report

The Authorization Code Diagnostic report (see Figure 85) compares the authorization codes assigned to users (Employees, External Parties, Roles/ Projects) in the Corporate Directories with the authorization codes that were actually used on call records. The report lists all of the authorization codes that are listed in the Directories but have not been used as well as all of the authorization codes that have been used but have not been assigned to a user in the Directories.

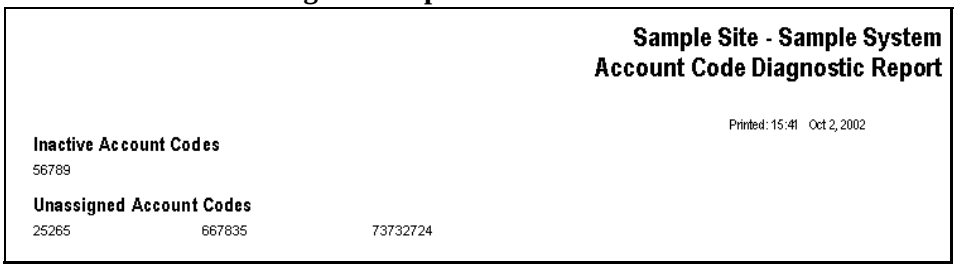
Figure 85 Authorization Code Diagnostic report



Account Code Diagnostic report

The Account Code Diagnostic report (see Figure 86) compares the account codes assigned to users (Employees, External Parties, Roles/Projects), in the Corporate Directories with the account codes that were actually used on call records. The report lists all of the account codes that are listed in the Directories but have not been used as well as all of the account codes that have been used but have not been assigned to a user in the Directories.

Figure 86 Account Code Diagnostic report


Sample Site - Sample System
Account Code Diagnostic Report

Printed: 15:41 Oct 2, 2002

Inactive Account Codes

56789

Unassigned Account Codes

25265 667835 73732724

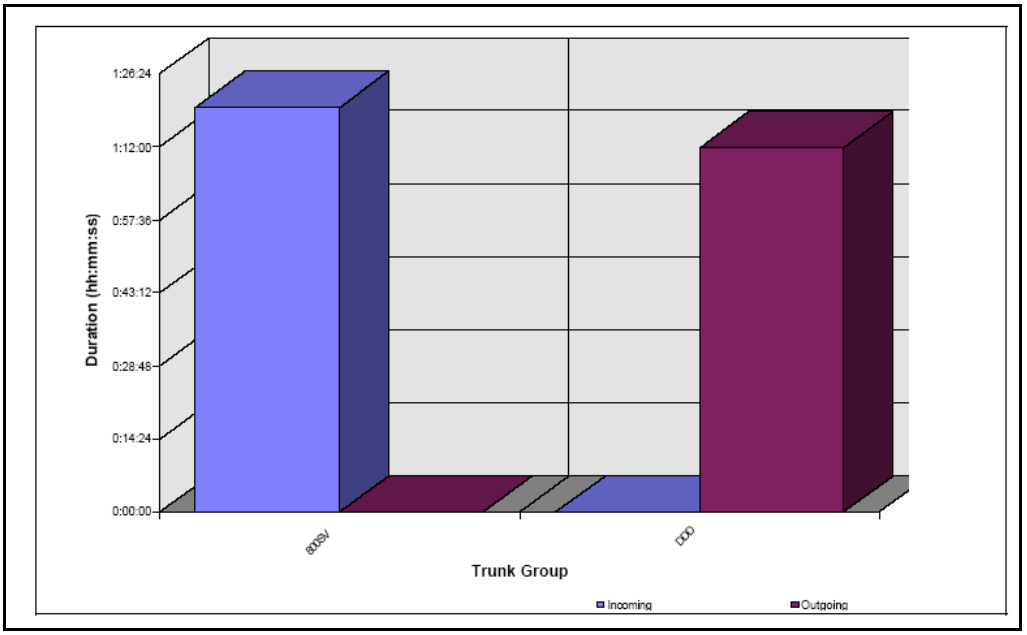
Traffic Reports

Trunk Group Graphs (Available for Calls, Costs, and Duration)

Trunk Group utilization by duration

The Trunk Group utilization by duration graph displays the incoming/outgoing calls and their duration on a Trunk Group. See Figure 87 on page 289.

Figure 87 Trunk Group utilization by duration



Trunk Usage

Trunk Utilization report

The Trunk Utilization report (see Figure 88 on page 290) provides call usage details for each trunk assigned to Trunk Groups or Services in the Telephone Configuration Database.

Figure 88 Trunk Utilization

Sample Site – Sample System
Trunk Utilization Report

Printed: 15:06 Oct 2, 2002

Trunk Group	Trunk	INCOMING Calls	INCOMING Duration	INCOMING Cost	OUTGOING Calls	OUTGOING Duration	OUTGOING Cost
800SV	1	2	2:34	2.00	0	0:00	0.00
	2	3	0:36	3.00	0	0:00	0.00
	3	2	2:50	2.00	0	0:00	0.00
	5	2	5:04	2.00	0	0:00	0.00
	6	2	25:30	2.00	0	0:00	0.00
	8	2	16:36	2.00	0	0:00	0.00
	10	2	3:00	2.00	0	0:00	0.00
	11	2	6:42	2.00	0	0:00	0.00
	14	1	2:58	1.00	0	0:00	0.00
	15	1	2:50	1.00	0	0:00	0.00
	16	1	1:32	1.00	0	0:00	0.00
	17	1	0:32	1.00	0	0:00	0.00
	18	1	1:48	1.00	0	0:00	0.00
	20	1	0:26	1.00	0	0:00	0.00
	21	2	2:02	2.00	0	0:00	0.00
	22	1	0:28	1.00	0	0:00	0.00
	23	1	2:26	1.00	0	0:00	0.00
	28	1	1:46	1.00	0	0:00	0.00
		26	**1:19:40**	**26.00**	**0**	**0:00**	**0.00**
DDD	1001	0	0:00	0.00	6	12:30	2.47
	1002	0	0:00	0.00	6	3:26	1.80
	1003	0	0:00	0.00	3	17:08	2.09
	1004	0	0:00	0.00	9	21:28	2.85
	1005	0	0:00	0.00	2	6:56	1.38
	1008	0	0:00	0.00	2	1:50	0.57
	1009	0	0:00	0.00	1	1:36	0.38
	1012	0	0:00	0.00	1	6:34	1.33
	1015	0	0:00	0.00	1	0:18	0.19
		0	**0:00**	**0.00**	**31**	**1:11:46**	**13.06**
TOTALS		**26**	**1:19:40**	**26.00**	**31**	**1:11:46**	**$13.06**

Trunk Detail

The Trunk Detail Report provides a detailed listing of calls and summary totals for each trunk line.

Web Reports

Cost Reports

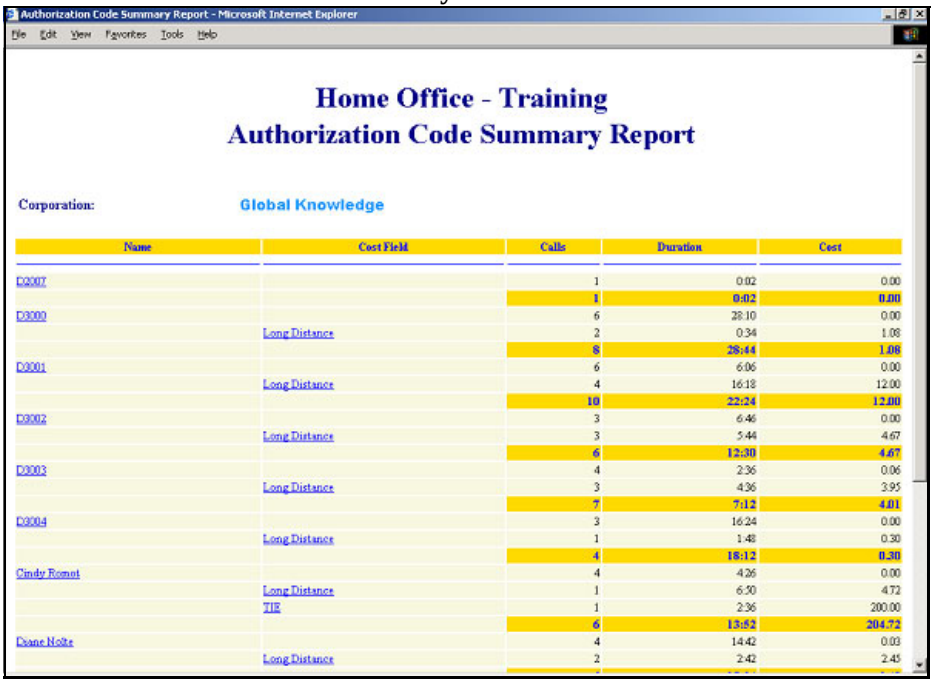
Extension Summary report

The Extension Summary report provides a summary of calls and totals for each extension. Clicking on any entity that is hyperlinked gives a detailed listing of calls for that entity.

Authorization Code Summary report

The Authorization Code Summary report (see Figure 89) gives total costs for calls made using an authorization code grouped by the prime owner. Authorization codes are not shown for security reasons. Clicking on any entity that is hyperlinked gives a detailed listing of calls for that entity.

Figure 89 Authorization Code Summary


Authorization Code Summary Report - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Home Office - Training
Authorization Code Summary Report
Corporation: Global Knowledge
Name | Cost Field | Calls | Duration | Cost
D2007 | | 1 | 0:02 | 0.00
| | 1 | 0:02 | 0.00
D3000 | | 6 | 28:10 | 0.00
| Long Distance | 2 | 0:34 | 1.08
| | 8 | 28:44 | 1.08
D3001 | | 6 | 6:06 | 0.00
| Long Distance | 4 | 16:18 | 12.00
| | 10 | 22:24 | 12.00
D3002 | | 3 | 6:46 | 0.00
| Long Distance | 3 | 5:44 | 4.67
| | 6 | 12:30 | 4.67
D3003 | | 4 | 2:36 | 0.06
| Long Distance | 3 | 4:36 | 3.95
| | 7 | 7:12 | 4.01
D3004 | | 3 | 16:24 | 0.00
| Long Distance | 1 | 1:48 | 0.30
| | 4 | 18:12 | 0.30
Cindy Romot | | 4 | 4:26 | 0.00
| Long Distance | 1 | 6:50 | 4.72
| TIE | 1 | 2:36 | 200.00
| | 6 | 13:52 | 204.72
Diane Nolte | | 4 | 14:42 | 0.03
| Long Distance | 2 | 2:42 | 2.45

Account Code Summary Report

The Account Code Summary Report displays the total number of calls, sum of duration, and sum of cost. The account code's data is then grouped by the CostField which can be Internal, Local, LD (Long Distance) and so on. Clicking on any entity that is hyperlinked gives a detailed listing of calls for that entity.

Level Reports

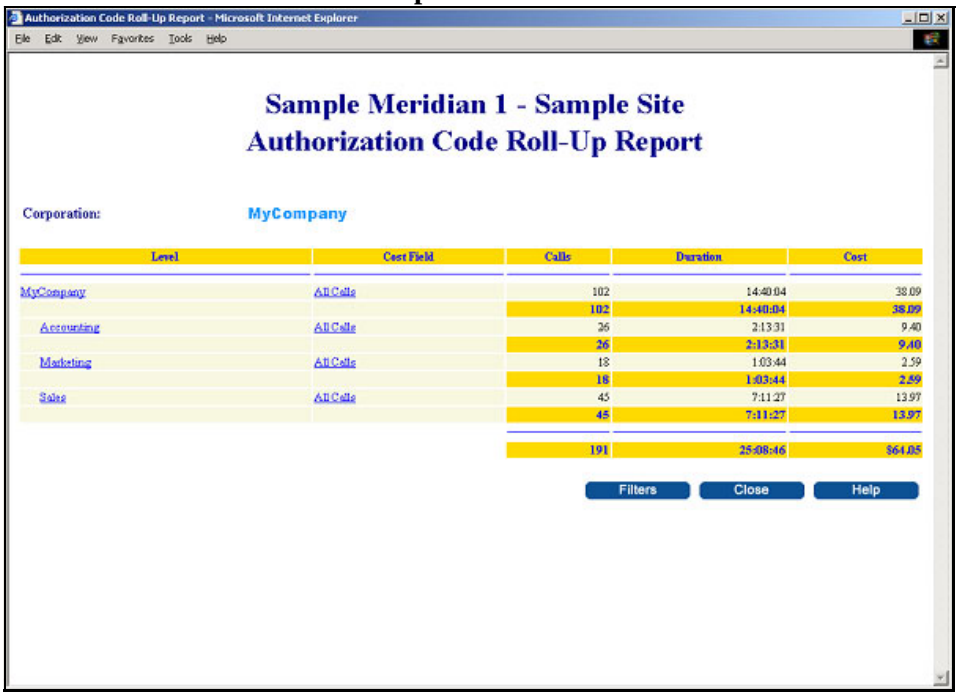
Extension Roll-Up Report

The Extension Roll-Up Report gives total costs for calls made using extensions grouped by the levels of the company's Organizational Hierarchy. Clicking on any entity that is hyperlinked gives a detailed listing of calls for that entity.

Authorization Code Roll-Up Report

The Authorization Code Roll-Up report (see Figure 90) generates cost totals for calls made using an authorization code grouped by the company's organizational levels Authorization Codes are not shown for security reasons. Clicking on any entity that is hyperlinked gives a detailed listing of calls for that entity.

Figure 90 Authorization Code Roll-Up



Account Code Roll-Up Report

The Account Code Roll-Up Report generates cost totals for calls made using account codes grouped by the company's organizational levels. Clicking on any entity that is hyperlinked gives a detailed listing of calls for that entity.

Frequency/Digits Reports

Frequently Called Numbers Report

The Frequently Called Numbers Report provides total number of times each telephone number listed was called and the total duration and cost of those calls. Clicking on the hyperlinked telephone number gives a detailed listing of those calls including who made them.

Frequently Called Locations Report

The Frequently Called Locations Report provides total number of times each telephone location listed was called and the total duration and cost of those calls. Clicking on the hyperlinked telephone location gives a detailed listing of those calls including who made them.

Area Code Summary Report

The Area Code Summary report lists the total number of calls, sum of duration, and sum of cost for each area code. Clicking on the hyperlinked area code displays a detailed listing of the calls including who made them for that area code.

Ring Time by Time of Day Report

The Ring Time by Time of Day report summarizes calls within each half hour time period of the day. This report displays the total number of calls, the number of unanswered calls, the average time and maximum ring times for the unanswered calls, and the number of answered calls and average and maximum ring times for the answered calls. Clicking on the hyperlinked Time Period provides a list of detailed calls for that time period.

Ring Time by Extension Report

The Ring Time by Extension Report lists each extension that received calls within the Time-Period selected from the previously displayed Ring Time Report by Time Period.

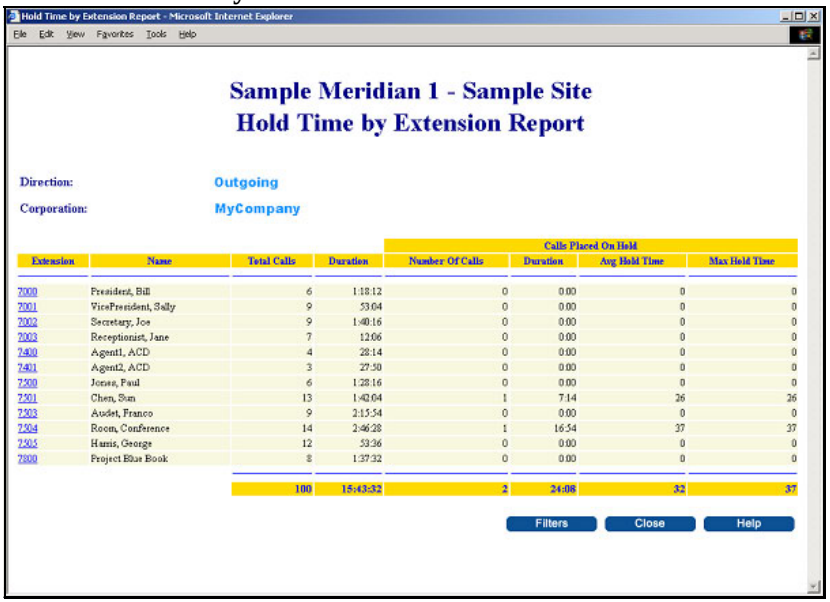
Hold Time by Time of Day report

The Hold Time by Time of Day report summarizes calls within each half-hour time period of the day and displays the total number of answered calls, the number of calls placed on hold, the total duration time for these calls, the average hold time and the maximum hold time. The time is in seconds, and overall totals, average, and maximum are provided. Clicking on the hyperlinked Time Period will provide a detailed listing of the calls made during that time period. (See next report example)

Hold Time by Extension report

The Hold Time by Extension report (see Figure 91) is accessed by clicking on the hyperlinked Time Period from the previous report. All time is in seconds. Overall totals, hold time average, and hold time maximum are provided.

Figure 91 Hold Time by Extension


Hold Time by Extension Report - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Sample Meridian 1 - Sample Site
Hold Time by Extension Report

Direction: Outgoing

Corporation: MyCompany

				Calls Placed On Hold			
Extension	Name	Total Calls	Duration	Number Of Calls	Duration	Avg Hold Time	Max Hold Time
7000	President, Bill	6	1:18:12	0	0:00	0	0
7001	VicePresident, Sally	9	53:04	0	0:00	0	0
7002	Secretary, Joe	9	1:40:16	0	0:00	0	0
7003	Receptionist, Jane	7	12:06	0	0:00	0	0
7400	Agent1, ACD	4	28:14	0	0:00	0	0
7401	Agent2, ACD	3	27:50	0	0:00	0	0
7500	Jones, Paul	6	1:28:16	0	0:00	0	0
7501	Chen, Sun	13	1:42:04	1	7:14	26	26
7503	Andet, Franco	9	2:15:54	0	0:00	0	0
7504	Room, Conference	14	2:46:28	1	16:54	37	37
7505	Harris, George	12	53:36	0	0:00	0	0
7800	Project Blue Book	8	1:37:32	0	0:00	0	0
		100	15:43:32	2	24:08	32	37

Filters Close Help

Trunk Reports

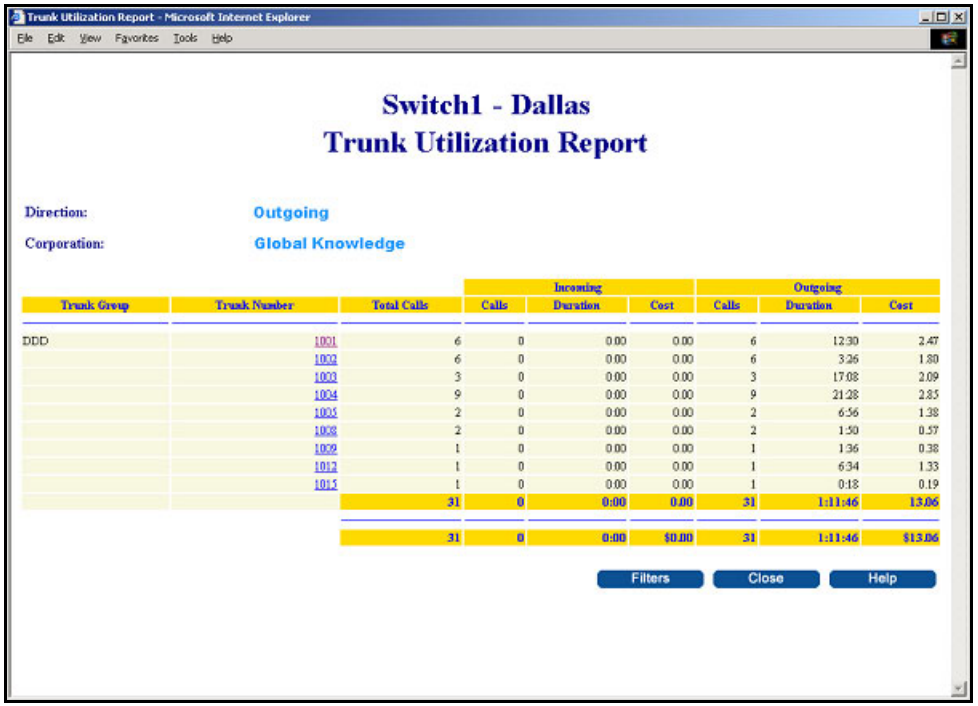
Trunk Group Utilization Report

The Trunk Group Utilization Report provides call usage details for each Trunk Group or Service in the Telephone Configuration Database. This report gives total calls, total incoming and outgoing calls, total duration, and total costs. Clicking on the hyperlinked Trunk Group provides a list of each Trunk Group member.

Trunk Utilization Report

The Trunk Utilization report (see Figure 92) is accessed by selecting a Trunk Group link for the previous report. Clicking on the hyperlinked Trunk Group member provides a list of all calls made on that trunk member.

Figure 92 Trunk Utilization



Trunk Group	Trunk Number	Total Calls	Incoming Calls	Incoming Duration	Incoming Cost	Outgoing Calls	Outgoing Duration	Outgoing Cost
DDD	1001	6	0	0:00	0.00	6	12:30	2.47
	1002	6	0	0:00	0.00	6	3:26	1.80
	1003	3	0	0:00	0.00	3	17:08	2.09
	1004	9	0	0:00	0.00	9	21:28	2.85
	1005	2	0	0:00	0.00	2	6:56	1.38
	1008	2	0	0:00	0.00	2	1:50	0.57
	1009	1	0	0:00	0.00	1	1:36	0.38
	1012	1	0	0:00	0.00	1	6:34	1.33
	1015	1	0	0:00	0.00	1	0:18	0.19
		31	0	0:00	0.00	31	1:11:46	13.06
		31	0	0:00	$0.00	31	1:11:46	$13.06

Diagnostic Reports

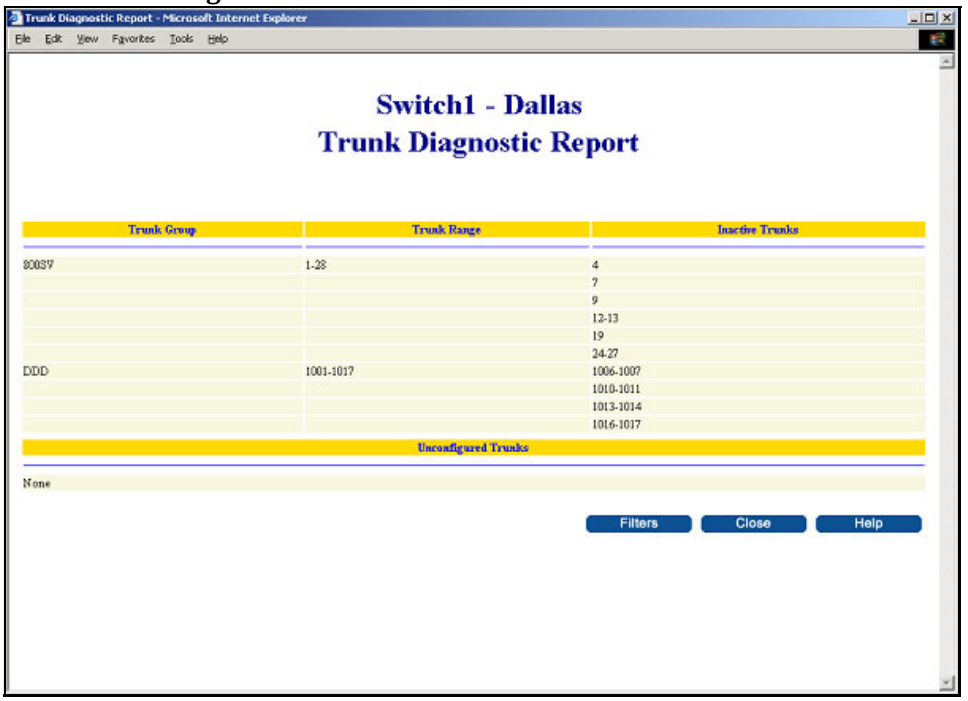
Extension Diagnostic Report

The Extension Diagnostic Report lists all the extensions that are entered in the Telephone Configuration that have no call activity as well as all the extensions that have call activity but have not been entered in the Telephone Configuration.

Trunk Diagnostic Report

The Trunk Diagnostic report (see Figure 93) lists all the trunks that are entered in the Telephone Configuration that have no call activity as well as all of the trunks that have call activity but have not been entered in the Telephone Configurations.

Figure 93 Trunk Diagnostic



Glossary

The following glossary provides a listing of commonly used telecommunications and computer terms. Many of these terms are used throughout the text without definition and are, therefore, offered here.

Access Code

The number dialed to connect the user with an outgoing trunk group (for example, 9 for local calls).

Account Code

An optional series of dialed digits used for internal corporate purposes of identifying a customer or client. These codes are used for client billing or tracking purposes.

AIOD/SMDR

Automatic Identification of Outward Dialing or Station Message Detail Recording. Suggests a method of capturing complete details of outgoing calls, which may be further processed.

Area Code

A three-digit number used to identify toll centers that are not in the Numbering Plan Area of the calling party.

Attendant

Console operator for the CS 1000M, CS 1000S, or Meridian 1 system, often referred to as the switchboard operator.

Authorization Code

A series of dialed digits that identify the caller and cause the CS 1000M, CS 1000S, or Meridian 1 system to grant access to services that are otherwise restricted.

Band

A geographical area to which a subscriber is entitled to call. Band 1 entitles the subscriber to call fewer area codes than Band 5. It is also referred to as Zone.

Baud

A measure of data transmission speed. It is expressed in bits per second, which roughly represents the character speed multiplied by 10. For example, 300 Baud is roughly 30 characters per second.

CBX

See Private Branch Exchange.

CCS

See Centi-Call Seconds.

CDR

Call Detail Recording. *See* Station Message Detail Recording.

Centi-Call Seconds

A unit used for the measurement of telephone traffic analysis, equivalent to one hundred seconds of telephone usage.

Central Office

Refers to the telephone company office to which incoming and outgoing lines are connected for the subscriber.

Database

A file or group of files, which are interrelated or serve a common purpose.

DDD

See Direct Distance Dialing.

Direct Distance Dialing

The service that allows dialing to areas outside the local area without the assistance of the operator.

DN

Directory Number. A user's telephone extension number.

Duration

The length of time taken for a call. The CS 1000M, CS 1000S, or Meridian 1 system records the duration as an estimate, because no signal is available to determine when the called party answers. Therefore, many short calls may be recorded for which no conversation took place. The limit for call duration is often adjustable.

EAS NPA

See Extended Area Service.

Erlang

The telephone traffic's international unit of measurement. One erlang is a trunk occupied for an hour; this is equivalent to 36 CCS.

Exchange

An area in which there is a uniform set of charges for the telephone service. It often refers to a central office and the first three digits dialed for a local call. It is also referred to as NXX.

Extended Area Service

A local telephone calling area, which is larger than normal.

Field

One data item, which is part of a group of data items making up a data record.

File

A group of data records.

Flat Rate Service

A uniform fee paid for services regardless of usage.

Foreign Exchange

A telephone number from a remote exchange working in a local exchange. Mileage charges usually apply.

FX

See Foreign Exchange.

Grade of Service

The probability of getting a busy signal when trying to access a line.

LCR

See Least Cost Route.

Leased Lines

Refers to private lines between two switching centers.

Least Cost Route

Some CS 1000M, CS 1000S, and Meridian 1 systems have the ability to determine the least expensive call route.

Measured Service

Measured service charges are dependent on the time of day, duration of the call, and the distance to the point dialed. Local calls in some cities are charged by measured unit, which is measured service.

Message Unit

A unit for charging local calls comprised of length of call, distance called, and time of day.

Node

Used to indicate a CS 1000M, CS 1000S, or Meridian 1 system in a network. It can also mean any endpoint in a network.

NPA

See Area Code.

NXX

See Exchange.

Other Common Carrier

A private company that has filed tariffs with the FCC to provide long-distance telephone service to subscribers.

PABX

See Private Branch Exchange.

PBX

See Private Branch Exchange and Node.

Peg Count

A counting device within the CS 1000M, CS 1000S, or Meridian 1 system, which indicates the number of calls placed, received, or blocked.

Private Branch Exchange

A privately owned telephone system, which supplies the interface between the business user and the public network. It is also referred to as PABX (Automatic) and CBX (computerized).

Pro-rated Costing

When the cost per minute for calls (using a specific trunk or trunk group) is calculated automatically by the system based on the total fixed cost of the trunks and divided by the actual usage of those trunks.

SDI port

See Serial Data Interface port.

Serial Data Interface port

A port on the CS 1000M, CS 1000S, or Meridian 1 system that can be configured to output CDR data.

SMDR

See Station Message Detail Recording.

Station Message Detail Recording

The ability of a CS 1000M, CS 1000S, or Meridian 1system to output information to supply reports which include time of call, calling extension, duration of call, number dialed, trunk group, and date. Additional information may also be output.

Tariff

A document filed with the FCC which details the services, equipment, and costs offered by a communications carrier. A tariffed item has a fixed cost.

TELCO

A telephone company.

Tie Line

A dedicated circuit linking two CS 1000M, CS 1000S, or Meridian 1 systems.

Trunk

A circuit used to connect two telephones. Trunks can be incoming, outgoing, two-way, or interoffice. Trunks are also identified by the type of service they provide (that is, DDD, FX).

Trunk Group

A group of trunks categorized by the type of service they provide. For example, trunks with DDD access are contained in a single trunk group.

Zone

See Band.

Index

A

accessing the General Cost Allocation System, 220
access rights, 198
Account Code Detail Report, 47
Account Code Diagnostic Report, 50
Account Code Roll-up Report, 194
Account Code Rollup Report, 177
Account Code Roll-up Summary Reports, 47
Account Code Summary Report, 47, 177, 193
Account Code Surcharge Detail Report, 49
Account Code Surcharge Roll-up Summary Reports, 49
Account Code Surcharge Summary Report, 49
Archive Call Database, 42
Area Code Location Summary Report, 49
Area Code Summary Report, 49, 194
Authorization Code Detail Report, 47
Authorization Code Diagnostic Report, 50
Authorization Code Roll-up Report, 194
Authorization Code Roll-up Summary Reports, 47
Authorization Code Summary Report, 193
Auxiliary ID Detail Report, 47

B

Bill Party Surcharge function, 127
bill types, 226
buffer units, 69

C

Call Area Summary Report, 49
Call Database, 42, 55
call detail information
    benefits of, 37
Call Digit Translation, 98
call history, 205
call monitor, 201
call records, 68
    collection, 71
    costing, 74
Call Tracking
    accessing, 212
    alarms, 203
    communications parameters, 215
    connection to Meridian 1 or Succession CSE 1000, 215
    graphical displays, 205
    hardware connections, 211
    overview, 34
Call Type Definition, 93
call usage details, 194
campus billing in Telecom Billing System, 127
Carrier Pricing Template, 95
Carrier Pricing Templates, 94
CDR output format, 76
CDR record, 69
communications parameters in Call Tracking, 215
Consolidated Call Cost Reports
    corporate properties, 179
    costing configuration, 179
    install and configure, 181
    interface, 174
    overview, 34
Consolidated Reporting System
    access, 241
    Entity Detail Report, 244
    Entity Summary Report, 244
    Organizational Roll-up Reports, 243
    overview, 35, 239

consolidated reports, 243
Consolidated Server, 184
Consolidated Server list, 177
context-sensitive Help, 36
conventions, text, 27
corporate properties, 179
Cost Analysis Reports, 47
Cost reports, 193
creating custom logos on reports, 46
currencies
    alternate, 187
    local, 187
currency properties, 181
Custom Reports, 50

D

data collection in Telecom Billing System, 56
data collection troubleshooting, 117
description of telemanagement applications, 33
Diagnostic reports, 195
Digits Detail Report, 49
Directory Information Reports, 48
DNIS Detail Report, 47
DNIS Summary Report, 47
Duration Summary Graph, 49
Duration Summary Graph by Call Type, 49

E

E-mail reports, 44
Employee Database, 51
Employee Directory Report, 48
Entity Detail Report, 47, 177
Entity Rollup Report, 177
Entity Roll-up Summary Reports, 47
Entity Summary Graphs, 47
Entity Summary Report, 177
Entity Surcharge Detail Report, 49
Entity Surcharge Roll-up Summary Reports, 49
Entity Surcharge Summary Report, 49
Exception Chronological Report, 47
Exception Chronological Surcharge Report, 49
Export data, 42
Extension Detail Report, 47
Extension Diagnostic Report, 50, 195
Extension Roll-up Report, 194
Extension Roll-up Summary Reports, 47
Extension Summary Report, 193
External Parties Database, 52
External Party Directory Report, 48
External Party Summary Report, 48

F

Filter Definitions, 45
Filters and configurations, 195
Frequency/Digits reports, 194
Frequency Reports, 48
Frequently Called Location Report, 194
Frequently Called Numbers Report, 48, 194

G

General Cost Allocation System
    accessing, 220
    bill types, 226
    creating billing records, 231
    features, 217
    overview, 35

H

hardware connections in Call Tracking, 211
Help, 36
Hold Time by Extension Report, 194
Hold Time by Time of Day Report, 194
Hold Time Detail Report, 48
Hold Time Summary Graph, 48
hospitality and campus billing in Telecom Billing System, 127
HTML format output, 44

I

Import data, 42

installation of rate tables and location books, 84

Internet Information Server (IIS), 197

L

Level reports, 194

list of reports available in Telecom Billing System, 47

list of the telemanagement applications, 33

List Trunk and Member (LTM) report, 90

Location Books, 54

Location Summary Report, 48

Long Distance Service Definition, 104

M

Mask characters, 229

mask properties, 228

MDR-2000
- connection to Meridian 1 or Succession CSE 1000, 78
- customization strings, 84
- security precautions, 78

Merge Root Nodes, 180

O

online Help, 36

Organizational Hierarchy Database, 51

Organization Roll-up Summary Graphs, 47

overlay 15, 77

overlay 16, 77

overview of Consolidated Call Cost Reports, 173

overview of Telecom Billing System Web Reporting, 191

overview of Telecom Billing System Web Reporting main Web interface, 192

P

Printer output, 44

publications
- related, 29

Purge Call Database, 42

purpose of guide, 35

R

Rate tables, 55

real-time collection in Call Tracking, 211

Refresh Site List, 177

report filters, 195

reports, 193

reports available in Telecom Billing System, 42

Restore Call Database, 42

Rich Text Format (RTF) output, 44

Ring Time Analysis Report, 48

Ring Time by Extension Report, 194

Ring Time by Time of Day Report, 194

Ring Time Report, 48

Role/Project Directory Report, 48

Roles/Projects Database, 52

roll-up summaries, 194

S

sample Filters page, 195

sample page, 192

screen output, 43

Script Configuration initialization file, 73

server PC, 197

Server setup, 197

Setup utility, 197

Snapshot format output, 44

Surcharge Reports, 49

Synchronize Corporate Data, 175

system access, 198

System Configuration Report, 50

system requirements, 197

T

Tandem Tie Summary Report, 50

Telecom Billing System
accessing, 67
call detail information, 37
configuring, 75
data collection, 56
hospitality and campus billing, 127
interface, 39
list of reports, 47
operating procedures, 115
reporting options, 43
reports, 42
surcharges for hospitality billing, 149
System Alarm pane, 41
System Monitor pane, 40
System Tasks pane, 40
taxes, 55
telephone configuration setup, 91
Telecom Billing System Web Reporting
features, 191
Filters page, 195
how to access, 196
list of reports, 193
overview, 34, 191
Telecom Billing System Web Reports, 192
telemanagement applications
description of, 33
list of, 33
Telephone Configuration Database, 52, 92
Telephone Configuration editor, 102
Telephone Configuration Report, 50
telephone configuration table, 199
text conventions, 27
Traffic Reports, 50
Trunk Detail Report, 50
Trunk Diagnostic Report, 50, 195
Trunk Graph, 50
Trunk Group Utilization Graphs, 50
Trunk Group Utilization Report, 194
Trunk reports, 194
Trunk Usage Reports, 50
Trunk Utilization Report, 50, 194

U

Unanswered Call Detail Report, 48
Unanswered Calls Summary Report, 48
Undisbursed Verification Report, 48
using Telecom Billing System Web Reporting, 196
Utility Tools Reports, 49

V

viewing web reports, 199

W

Web Reports, 192
Web Reports page, 193

Nortel Communication Server 1000

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Telemanagement Applications

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